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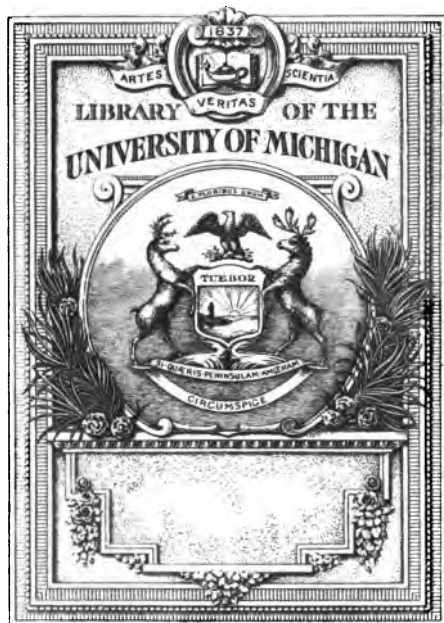
## COTTON GROWING IN NIGERIA

REPORT OF SIR HECTOR DUFF TO THE  
COMMITTEE ON A TOUR UNDERTAKEN  
IN NIGERIA, FEBRUARY—JULY, 1921

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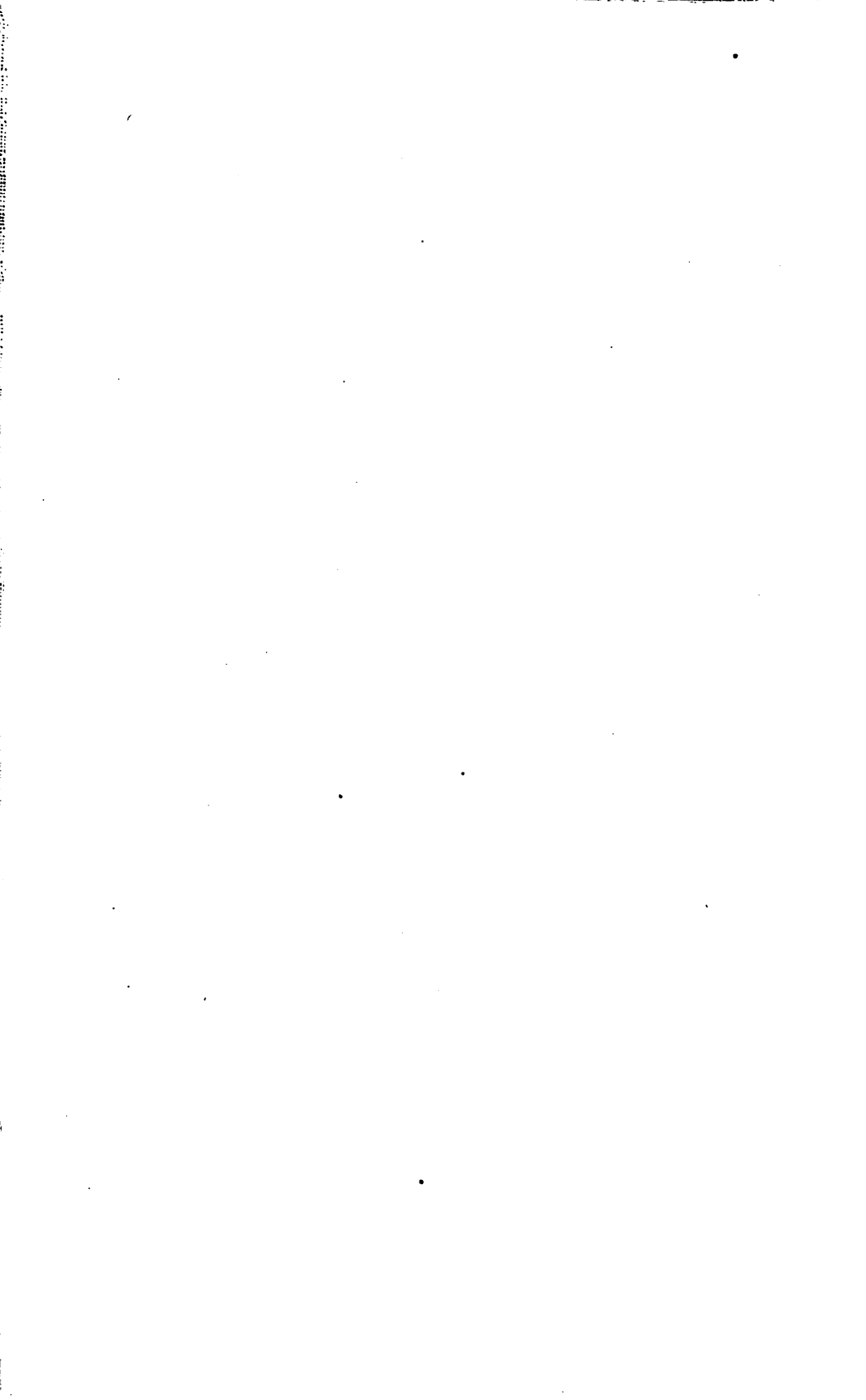
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## **COTTON GROWING IN NIGERIA**



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# COTTON GROWING IN NIGERIA

## INTRODUCTORY

I LEFT Liverpool for Nigeria on the 9th of February, 1921, returning to England on the 25th of July after an absence of five and a half months.

During that time I travelled within the Colony and Protectorate for a total distance of about three thousand miles, halting for periods varying from a day to a week, according to their importance, at the places shown on the attached map (see Appendix I.).

In the course of these travels I met, in addition to the local representatives of the British Cotton Growing Association, practically all the principal officials of the Nigerian service, including the Governor (Sir Hugh Clifford, G.C.M.G.), the Chief Secretary (Mr. D. Cameron, C.M.G., now Acting Governor), the Lieutenant-Governors of the Northern and Southern Provinces, the Directors of Agriculture (Northern and Southern), the General Manager of the Nigerian Railway, the Director of Marine Transport, the Superintendent of Motor Transport, and many other departmental authorities, besides, of course, the Residents and District Officers of every province through which my route lay. At the same time I made a point of meeting the native chiefs of the various Emirates or other territories visited during my tour, including the Sarkin Musulmi (Sultan) of Sokoto, the Emirs of Kano, Zaria, Ilorin, Kontagora, Argungu, etc., the Headmen of Yelwa, Besse, Birnin-Kebbi, Rahama, and many others.

Before proceeding farther I wish to bring to the notice of the Committee the invaluable assistance which I received, before leaving England, from Sir Frederick Lugard, G.C.M.G., who so freely gave me the benefit of his advice as to the general outlines of my tour, and from Mr. W. H. Himbury, Manager of the British Cotton Growing Association, who went out of his way to help me by every means in his power; and I would take this opportunity also to express my cordial acknowledgments of the great kindness and consideration which I received from nearly everyone whom I met in Nigeria itself.

At the time of my arrival the Governor was engaged on a tour of the Northern Provinces prior to his departure for England on leave of absence, but he was obliging enough to meet me at Zaria, where I breakfasted with him on the train and had an opportunity

of explaining the scope and objects of my mission and of discussing some of the more important problems connected with it. These discussions were necessarily of a provisional and general character only, since I had then no practical acquaintance with local conditions, and was not in a position to formulate detailed proposals, but His Excellency evinced much interest in the whole subject of the Nigerian cotton industry, and was kind enough to say that he would be glad to meet me in London after the completion of my tour, and to give his careful consideration to any definite suggestions which might then be put forward.

In Sir Hugh Clifford's absence I received every possible assistance from the Acting Governor, Mr. Cameron, who readily placed at my disposal all the information for which I asked from time to time, and did everything in his power to help me. I am very specially indebted to Mr. Cameron's courtesy and likewise to his wide knowledge of Nigerian affairs, from which I derived the utmost assistance.

With this acknowledgment I should like to associate the expression of my sincere thanks to the other Government officers above mentioned, and also to Mr. J. Percival and the local staff of the British Cotton Growing Association, all of whom did their utmost to co-operate with me and to make my mission a success—in short, no one could have received more willing help than I did throughout my tour. If I lay special emphasis on this, it is because I feel that, in transactions of the kind which the Committee contemplates, it is of the first importance that the relations between its representatives and the local authorities should be founded in mutual confidence and good-will. I hope and think that one of the results of my tour has been to establish such a footing and to enlist a large measure of sympathy in Nigeria for the great work which the Committee has in view.

In drawing up this report I have aimed in the first place at giving some general idea of the country and its native inhabitants, the distribution of the most promising cotton centres, the existing system of communications and how far they serve these centres, the constitution of the Government with reference more particularly to those departments whose co-operation is of special importance to the Committee's objects, and after thus outlining broadly the conditions which obtain at the moment, I have endeavoured to indicate generally the lines on which it appears to me that existing facilities could be reinforced or new means of development introduced.

The first part of the report, which is mainly descriptive, probably goes over a good deal of ground with which the Committee is already familiar, but for the sake of continuity I have deemed it best to begin with a short summary of things as they are before attempting to deal with questions of constructive policy.



## PART I

### DESCRIPTIVE

1. **PHYSICAL FEATURES, ETC.**—I do not propose to burden this report with any very exhaustive description under the above head, particulars as to which can be found in numerous works of reference, but a few notes as to the general aspect of the country may not be out of place.

The coastal region and its immediate hinterland are low, damp, and hot, covered with dense forest, and intersected from Forcados to Bonny by the innumerable creeks and channels through which the waters of the Niger find their way to the sea. All this thickly wooded country forms the so-called oil and cocoa belt, of which the northern fringes meet and slightly overlap the southern edge of the cotton zone on or about the parallel of Ibadan in the province of Oyo. Between Ibadan and Ilorin the typical aspect of this southern bush begins gradually to change. Open spaces are seen here and there, the oil palms grow fewer, and north of Ilorin disappear altogether. Beyond Jebba, where the railway crosses the Niger, the country assumes the character of a vast, slightly undulating tableland, varying in height from about 1,200 to 2,000 feet, covered with scrubby thickets and with occasional outcrops of rock and patches of open grass.

There is not much close cultivation near the railway, as far as I could observe, until one reaches Zaria, where the extent and thoroughness of the native husbandry are most remarkable. The same is the case, on an even larger scale, all round the great native city of Kano. The population of this part of Nigeria is very dense, and the amount of foodstuffs which have to be grown is, of course, correspondingly large; still I was hardly prepared for such a wonderful agricultural spectacle as the environs of Kano present. One can travel as I did, for miles and miles on every side of it, and scarcely find a square yard of soil that has not been tilled with the greatest assiduity. I was much interested to notice the depth and thoroughness of the trenching and ridging, all done with the hoe; the primitive irrigation carried out by means of buckets swung on wooden levers; the cross-banking to retain moisture, and various other agricultural devices of a simple but quite effective character. The fields hereabouts are divided up (a thing which I saw hardly anywhere else in Nigeria) by neat hedges of some euphorbiaceous

plant and are interspersed with shade trees, the result being a curiously ordered and park-like appearance much in contrast with the wild aspect of the less settled parts of the country.

On the Bauchi branch railway which runs south-east from Zaria to Bukuru there are well-established cotton centres as far as Rahama and some scattered cultivation of the same crop up to about the neighbourhood of Jos. The Bauchi plateau itself is open, hilly, and bracing, very similar in character to the mountainous uplands of East Africa; but as practically no cotton is grown there, and as the altitude and climate are in fact unsuitable to the crop, I did not proceed farther in that direction than Jos.

One of the most interesting tours which I undertook during my visit was through the province of Kontagora, west of the railway, to the valley of the middle Niger, and thence through the south-western, central, and south-eastern parts of Sokoto, a distance of some 680 miles across country. I shall have occasion later on in this report to discuss the great cotton possibilities of this area and the means by which they might be developed.

Towards and beyond Sokoto the woodlands cease and the country assumes the typically flat, sandy appearance characteristic of those extreme northern districts which abut upon the edges of the Sahara Desert. Although this neighbourhood still supports a considerable population, there can be little doubt that the persistent southward drift of the Sahara is gradually reducing its cultivable area. At the time of my visit the burning seasonal wind, known as "Harmattan," was blowing strongly from the desert, depositing films of dust and sand all over the country. The heat at times was almost unbearable, my thermometer rising on occasions to 108, 110, and once to 113 degrees in the shade, while the sun-glare was so intense as temporarily to affect my eyesight.\*

During the latter part of this journey (between Sokoto and Zaria) I met with a succession of so-called "tornadoes"—short, violent hurricanes followed by thunder and heavy squalls of rain which carried away bridges and culverts, and, piling the roads with masses of wet sand, brought my car to an absolute standstill. Eventually I was compelled to leave the car behind in charge of its native driver to be extricated at leisure, and made my own way with difficulty to Zaria on a light lorry. I should indeed have had to proceed there on foot, at a great waste of time, but for the friendly attitude of the native villagers living near the road who never failed to come to my assistance whenever I was in difficulties, and repeatedly dug and hauled the motor out of sand drifts which would otherwise have been impassable.

\* It must be remembered, of course, that this was one of the hottest parts of Nigeria, and quite the hottest time of the year—namely, March and April.

I feel that it would be out of place in a report of this kind to elaborate further these few descriptive notes, which I have merely taken from my diary with the object of giving some rough idea of the kind of country through which my travels lay; but I cannot close this paragraph without a passing reference to the beautiful districts of Oyo and Isseyin, west of Ibadan in the province of Oyo. Isseyin, in particular, is one of the most interesting and attractive places in Nigeria, and I was considerably impressed by the cotton possibilities of the province of Oyo generally, which has produced this season no less than nineteen thousand bales. Unfortunately, the quality of this southern cotton at present leaves a good deal to be desired, but with this and other difficulties I shall deal fully when I come to the constructive part of my report.

2. AREA AND POPULATION.—Nigeria covers some 336,000 square miles, and (including the mandatory territory of the Cameroons added since the war) is almost exactly equal in size to Tanganyika, formerly German East Africa.\* The population of Nigeria (16,393,000) is, however, far greater than that of Tanganyika.

For facility of reference I have attached to this report a tabular statement (see Appendix II.), showing separately the area, total population, and average number of inhabitants per square mile of every province in Nigeria. It will be observed from this statement that the relative density of population varies enormously, from 363 per square mile in Onitsha to only six in Kontagora. This divergence is noticeable not only as between provinces which, like those mentioned, lie at a great distance from each other and differ markedly in their climate and physical features, but also to a large extent as between neighbouring provinces and even different parts of the same province. Thus, for instance, Sokoto, which immediately adjoins Kontagora, is peopled more than seven times as thickly, yet there are parts of Sokoto which are as desolate as almost any portion of Kontagora. Similarly, the population of Kano, which lies between Sokoto and Bornu, is more than twice as dense per square mile as that of the former, and nearly five times as dense as that of the latter; but it is concentrated to a great extent in walled towns, notably in and around Kano itself, and beyond the food radius of these crowded centres the average of population sinks very markedly indeed.

This irregular distribution is doubtless due primarily to the fact that before the advent of British rule in Nigeria, which is among the youngest of our oversea dependencies, concentration was absolutely necessary for purposes of defence against tribal enemies. The same thing was noticeable in East Africa when I first travelled there, towards the end of the last century, but the stockaded

\* Nearly one-fifth the size of India.

villages which I remember in Nyasaland and Zambesia in those days and which were the counterparts of the walled towns of Northern Nigeria have long since broken up. It is, I think, doubtful whether any very extensive dispersion of the native populace is ever likely to recur in these provinces, for the Hausa people are born traders and commerce means markets which always tend to draw men together more or less. Moreover, we must bear in mind that from the point of view of administrative control the disintegration of native communities cannot be carried beyond a certain point without creating certain political difficulties. Nevertheless, there is no question that the interests of agricultural development would be powerfully advanced by some wider degree of settlement than exists in Northern Nigeria at present, and it is to be hoped that, with the continuance of peace and good government, some movement in that direction will gradually take place.

3. NATIVE TRIBES.—Since the cultivation of cotton in Nigeria is a purely native industry, and since no substantial progress therein is possible independently of native co-operation, it becomes of importance to enquire what is the general character of the native tribes—at any rate of those inhabiting the principal cotton growing areas. These areas lie chiefly in the north, the habitat of the Hausas and Fulani, and in the south-west, the country of the Yorubas.

I cannot, of course, assume to speak in detail on such a subject from the experience gained during a single tour, but I lost no opportunity of getting into touch with the local natives wherever I went and of conversing at length with their Emirs and Headmen, so that I was able to acquire a fair practical knowledge of their general disposition and habits. The interviews in question had to be conducted, of course, through third persons, but wherever possible I obtained for this purpose the services of the Resident or other Political Officer in charge. I should like to take this opportunity of expressing my obligations to these officers for the assistance which they so kindly and freely rendered to me in this respect. It gave me, in the first place, the great advantage of having interpreters on whose accuracy and good faith I could completely rely, and at the same time it fulfilled a condition at which, as far as circumstances permitted, I always aimed—namely, that my interviews with the more important native rulers should take place in the presence of an accredited representative of the British Administration. I felt this to be desirable, both as an ordinary act of courtesy towards the Government, and because, in conversations of the kind which took place between myself and the native chiefs, it is evidently proper and advantageous that the official point of view should have an opportunity of being represented.

I may say at once that I found the native Emirs—especially those of the Northern Provinces—to be in almost every case intelligent, dignified, and friendly. Some of them evinced considerable enterprise in their views, and nearly all showed a lively interest in the subject of the cotton industry, which they discussed in their simple way with a good deal of acumen.

The rank and file of the native inhabitants in the provinces through which I personally travelled, especially in the Hausa and Fulani states, impressed me most favourably—in short, I have no hesitation in saying that one of the most important agricultural assets in Nigeria is its indigenous population. In Lagos itself, and more or less round about the principal European settlements generally, the natives are, of course, comparatively sophisticated, as is the case in all tropical colonies, but as one penetrates into the hinterland one meets on all sides with the simplicity and unassuming friendliness so characteristic of the African in his natural state. The Nigerian peasant farmers are excellent cultivators in their own fashion, which, although primitive, is the outcome of immemorial local experience, and is generally very well suited to the conditions of the country. So much is this the case that, fully, of course, as I recognize the advantages of modern agricultural methods and implements, I should be inclined, if I were dealing with the matter, to introduce these in such a country with a good deal of caution, for their superiority, however striking, is not absolute but conditional, and it is a question whether and how far conditions in Nigeria at present are suitable for their employment on any large scale.\* I would recommend, certainly, that such implements and methods be tried experimentally, and that every opportunity be taken of bringing them to the favourable notice of native cultivators in so far as they may prove satisfactory under the test of local conditions. That is a different thing. But care will have to be taken not to press new systems or contrivances with undue haste. We have to remember that in Nigeria, and particularly in those provinces of Nigeria to which we must chiefly look for our cotton, we are dealing with a type of native who, for all his docility and friendliness, is intensely conservative, and whose habits have changed less probably in many centuries than ours change in every generation. In asking him now to look at things from our modern standpoint, and to discard so much of what his forefathers have taught him, we are making a very heavy demand on him—we are asking him to bridge a tremendous gap—and we must have patience with him or we may defeat our purpose.

\* As to this, it is worth noting, for instance, that Mr. P. Lamb, Director of Agriculture for the Northern Provinces, has recently expressed himself with some emphasis in favour of the native system of tillage by hand as compared with the plough.

4. DISTRIBUTION OF COTTON AREAS.—I am transmitting with this report, under separate cover, a map (Appendix III.) kindly prepared at my request by the Survey Department at Kaduna from data supplied by the Northern Agricultural Department, showing in different shades of colour the primary and secondary cotton areas and all gazetted cotton markets and ginneries in the Northern Provinces. I had intended the map to embrace the southern cotton districts also, but this omission is not of much practical significance since the only cotton region of conspicuous present importance in the south is the province of Oyo, with ginneries at Oshogbo and Ibadan, and official markets at Oyo itself and at Ogbomosho.

Apart from the above, which may be termed “active areas”—that is to say, areas which already furnish exportable cotton in larger or smaller quantities, and in which regular buying stations, ginneries, etc., have been established—there are certain outlying tracts which, for the sake of convenience, I will call “reputed areas”—viz., localities in which a certain amount of indigenous cotton has long been grown in a rough and ready way for local consumption, and which it is hoped may be capable of producing, with proper attention, a substantial yield of exportable lint, but which, owing to their remote situation, difficulties of transport, shortage of agricultural officers, and so forth, have not yet been systematically tested. Of these reputed areas, two in particular have recently attracted attention—namely:—(a) The environs of Lake Chad in the province of Bornu; and (b) The region lying (roughly) between the native towns of Jega in South-Western Sokoto and Yelwa in Northern Kontagora.

As to (a): At the time of my arrival in Nigeria it so happened that Mr. Lamb, Director of Agriculture for the Northern Provinces, and Mr. Percival, Nigerian Manager of the British Cotton Growing Association, had recently completed a joint tour of this (the Chad) area, and both, I regret to say, have since reported very adversely on its resources as a cotton growing region. The grounds cited in support of this view were (*inter alia*) the steady encroachment of the sands of Sahara upon Northern Bornu; the exceptional intensity and duration in that quarter of the burning “Harmattan” wind and the consequent shrinking rainfall and gradual sterilization of those Bornese districts which, like the Chad littoral, abut upon the southern edges of the desert. Mr. Lamb stated that such cotton as he found in the Chad region was the worst he had ever seen, with bolls no larger than acorns. This in itself might, of course, be due merely to careless or unskilful cultivation, but both Mr. Lamb and Mr. Percival were unanimous in considering the neighbourhood in question to be in fact climatically unsuited to the production of exportable cotton.

These gentlemen added, quite properly, that they did not wish to advance the above opinion dogmatically or to claim final authority for it, since their tour in Bornu had been too limited as regards time to admit of more than a cursory survey, and they suggested that systematic experimental and pioneer work would be necessary before any conclusive judgment on the resources of the area could be passed. Meanwhile, however, they were emphatic in advising that a tour in that direction on my part would be waste of time and of the Committee's money, and strongly advised me to substitute a journey through the Jega-Yelwa region from which Mr. Percival had lately returned, and regarding which his account was as favourable as the report on the Chad district was the reverse.

At the same time I recalled that Sir Frederick Lugard had described the province of Kontagora as containing probably some of the most ideal cotton tracts in Nigeria, and this estimate, coinciding so strongly with Mr. Percival's favourable report of the same locality, appeared to mark it out as one which I ought to visit if at all possible.

5. COMMUNICATIONS—(a) *Railways*.—The existing main (western) line runs from Iddo (Lagos) in a north-easterly direction for 705 miles to Kano, with a branch line of the same gauge (3 feet 6 inches) from Minna to Baro on the Niger River, and a narrow-gauge branch from Zaria to Bukuru on the Bauchi plateau. A new (eastern) line of the standard gauge is also under construction from Port Harcourt (near Bonny), and has already reached the Udi coalfield at Enugu, whence, after crossing the Benué River, at a point near Abinsi, it will proceed north-north-west until it joins the main western line at Kaduna.

It will thus be seen that the most active cotton centres of Nigeria are on the whole very well served by the present railway system. The point, however, is not so much—as I have heard it put sometimes—that the railway passes through the districts where cotton is chiefly grown, as that cotton is chiefly grown in the districts through which the railway passes, which is by no means the same thing. Railways naturally tend to stimulate production wherever they go, and that cotton, or any other local crop, should attain its greatest development along the main transport routes is just what might be expected. It would be a mistake to infer that the same crops could not be produced with equal or possibly even greater success in other parts of the country were similar facilities available, and in looking at the cotton map so kindly prepared for me by the Nigerian Survey Department this will no doubt be borne in mind.

(b) *Waterways*.—The principal waterway of Nigeria is, of course, the great river from which the country takes its name. Entering the Protectorate from the north-west the Niger flows mainly south-east as far as Lokoja, whence it proceeds nearly due south to the head of



its delta, discharging itself finally into the sea through the intricate network of creeks between Forcados and Bonny. Its chief, indeed its only great, tributary, the Benuë, enters the Protectorate from the Cameroon frontier on the east, and, flowing west and south-west, joins the Niger at Lokoja.

The navigable value of these two rivers is very different. The Benuë, notwithstanding its length and the imposing figure which it cuts on the map, is only practicable for steamers during some three months in the year, more or less, and that not at the time when harvesting and marketing are in progress, so that its importance as a cotton highway is not of the first order. The Niger, on the other hand, is permanently navigable by steam up to Lokoja, and, during the wet season as far, I believe, as Jebba. Above the latter point the fairway of the stream is barred by a series of extremely formidable rapids. I am afraid there is little prospect of its being possible to deal with this obstacle either by blasting or by canalization, in such a way as to open the passage of the river at this point to steam navigation. If that could be done, or if alternatively a railway were constructed from Jebba to Yelwa, the waterway of the middle Niger might play a very important part in the development of the fertile areas of Northern Kontagora and South-Eastern Sokoto already mentioned. I shall have something further to say about these projects when I come to the constructive part of my report, although, having regard to the present commitments of the Nigerian Government, they can scarcely be considered as falling within the scope of any programme likely to be undertaken for several years to come.

Like the Benuë, the middle Niger is regularly navigated by canoes which, during the flood season, often shoot the rapids, though at other times their cargo has to be discharged and carried overland to a point lower down the stream. Even on quite minor streams canoes can and do ply freely, and the aggregate of merchandise which is carried by these means in different parts of the Protectorate must be very considerable. This is notably true as regards the palm products of the deltaic provinces where the short, deep, coastal creeks are particularly well suited to canoe traffic. On the other hand, the use of canoes for transporting an inland crop like cotton is not a satisfactory arrangement, involving, as it does, very long voyages through the upper reaches of rivers which, during a great part of the year, are comparatively shallow and broken, and can only be navigated subject to the necessity of frequent evacuations of cargo and laborious portages across sand-banks and other obstacles. The time occupied in transit is inordinately long; the cargo is exposed to considerable risks of injury from damp and from repeated handling at the portages, while, owing to the rise in the rate of native wages, the element of

cheapness, usually the one great advantage of water transport, is no longer what it was in the case of hand-propelled craft. These considerations have in fact been so far recognized by the British Cotton Growing Association that the policy of employing native canoes and barges to carry cotton down the Benué is, I understand, being gradually discarded in favour of riverside depots, where the crop can be stored until the annual rise of the river enables steamers to ascend it.

I quite admit, of course, the usefulness of canoes in special circumstances (as in the Niger delta), or for purely native traffic between one riparian village and another; but for the purposes of any scheme of transport which aims at dealing with a really large export trade in cotton, such as we hope eventually to create in Nigeria, these primitive craft cannot, I think, be taken very seriously.

(c) *Roads*.—Nigeria has a fair supply of what are called “dry-weather” roads—that is, roads with plain earth surfaces which have to be remade more or less after each wet season. In the neighbourhood of the chief European settlements, and for considerable distances between them, there are also the so-called “laterite” roads, dressed with a kind of triturated gravel, which gives an excellent running surface. These laterite roads are sometimes loosely referred to as “macadamized,” but of real macadam, by which I mean artificially broken metal with a deep bottoming of rock, I saw none in Nigeria, and I understand that there is in fact practically none in the country.

As far as the northernmost provinces are concerned, such costly highways are scarcely necessary. It is certain that petrol-driven motors could not be used profitably for dealing with a crop like cotton at so great a distance from the coast, or indeed with any other crop now cultivated in those parts, and unless and until this position is altered (e.g., by the discovery of some cheap form of motor fuel or otherwise), there seems no reason why money should be spent on expensive permanent roads. For animal transport, which is very largely used in the Northern Provinces and which, under existing conditions, is the cheapest and most efficient means of feeding produce to the railways, ordinary earth roads are perfectly suitable, especially during the dry season when cotton is marketed, and the construction of such roads is, by comparison, so cheap that they could be multiplied almost indefinitely at a cost which would not pay for more than a quite insignificant mileage of macadam.

In the Southern Provinces the position is different. Pack and draught animals do not exist there; native porters are growing every year more difficult to obtain, and, consequently, merchandise from outlying areas must, as far as I can see, become increasingly dependent on motors, or on some form of mechanical transport, for

access to the railway. It is true that motor-lorries are already in use in some of the southern cotton districts, such as Oyo, but their capacity is limited by that of the roads and bridges over which they have to travel. At present these are not capable of taking vehicles exceeding a certain moderate size and weight, and this tends, of course, to increase the cost of transport. I shall, however, deal with this question more fully later on.

(d) *Animal Transport.*—A few words as to the existing system of animal transport may not be out of place at this point. The animals used consist chiefly of camels and donkeys, though cattle are also employed to some extent. The camels are rather weedy as compared with those of India and Egypt, and do not, as a rule, carry more than 400 pounds or so. The Nigerian donkeys are wonderfully hardy little beasts, and, in proportion to their size, are far more heavily laden than the camels. The usual load for a donkey is about 150 pounds, distributed in two packs of 75 pounds, one on each side, but this weight is often considerably exceeded, and it is not uncommon to see donkeys carrying as much as 200 pounds.

The number of pack animals in the Northern Provinces must be very considerable. During the cotton marketing and ginning season a constant procession of camel and donkey caravans may be seen every day from morning to night on any of the principal roads\* from batches of half a dozen to strings of fifty or more; while the number of cattle in the provinces of Sokoto, Kano, and Bornu alone has been estimated at no less than three millions.

The chief native stock-market of the north is at Kano. I took occasion to visit this market twice in order to ascertain the class of animals sold there, the prices realized, and other particulars. I found dealings going on in camels, horses, donkeys, slaughter and pack cattle. Prices were as follows: Camels, £11 to £12; horses (ponies), £8 to £12;† slaughter cattle, £7 to £10; pack cattle, £4 to £6; donkeys, £2 to £3. I had heard previously such conflicting statements regarding the price of live stock that I took particular care to ensure the accuracy of the above figures, and, through the kindness of the Political Officer who accompanied me, I was enabled to witness the actual bargains as they took place. The rates quoted are somewhat higher for the most part than those ruling several years ago, but much lower than what obtained during the recent ground-nut "boom," when the demand for transport animals reached such a pitch that donkeys, for instance, which could be purchased not long before for 15s., fetched, for a short time, as

\* Many of the camels, however, come from French territory.

† These were, of course, native-owned ponies and not of a class which Europeans would buy.

much as £6 and £7 apiece. As already stated, I consider the existing pack service to be, on the whole, a good, cheap, and efficient means of auxiliary transport, well suited to the conditions prevailing in the provinces where it is worked. In one or two respects, however, it appears capable of improvement, and as to these I shall offer certain suggestions in due course.

6. THE AGRICULTURAL DEPARTMENT.—In Nigeria, as in all African colonies and protectorates, there are two branches of the public service whose co-operation is peculiarly essential to the successful development of such schemes as the Empire Cotton Growing Committee has in view—namely, the Department of Agriculture and the Political Staff, that is to say, the administrative officers in charge of provinces or districts, to whom the natives are accustomed to look for guidance in all their affairs, and whose local influence is therefore exceptionally strong.

As to the Agricultural Department the policy followed hitherto of maintaining it in two separate branches, one working in the north and the other in the south, has resulted no doubt from the former political separation of Northern and Southern Nigeria. Conditions are, of course, very different in the two territories, but, now that they have been amalgamated under one Government, the balance of expediency would seem to be decidedly in favour of fusing their various Departments as far as possible, and it is therefore satisfactory to learn that the union of the northern and southern Agricultural Departments has already been decided on, and was in fact, in process of being effected when I left Nigeria. The present strength of the establishment is, I understand, as follows:

<i>North.</i>	<i>South.</i>	<i>Totals.</i>
1 Director	1 Director	2 Directors
1 Superintendent	1 Assist. Director	1 Assist. Director
4 Assist. Superintendents	6 Superintendents	7 Superintendents
	8 Assist. Superintendents	12 Assist. Superintendents
	1 Entomologist	1 Entomologist
	1 Mycologist	1 Mycologist
6	18	24

As already stated, the combined staffs are now to be placed under a single Director, while Mr. Lamb, hitherto Director for the Northern Provinces, will assume the duties of Deputy Director on the amalgamation of the two branches.

I gather that it had been Sir Hugh Clifford's intention to reinforce the numerical strength of the Department by increasing the staff of Superintendents and Assistant Superintendents, and by

adding an Assistant Entomologist, an Assistant Mycologist, and two Agricultural Chemists. Owing, however, to the results of the recent severe trade depression, from which the revenues of Nigeria in common with those of other colonies are likely to suffer a sharp temporary set-back, it will probably be necessary for the Nigerian Government to effect substantial reductions in its estimated expenditure for the ensuing financial year, and steps to that end were in fact being taken at the time of my visit to the country. I do not know at present whether, and if so to what extent, the proposed additions to the agricultural staff are likely to be affected by the above revision, but, in the circumstances, it appears very doubtful whether it will be possible to carry them out in their entirety.

It is earnestly to be hoped, and I see no ground for doubting it, that the trade of Nigeria will ultimately recover its prosperity in the fullest measure—indeed, there are signs of a revival already; but meanwhile the necessity for caution is evident, and I feel sure that the sympathy of the Committee at this juncture will be with Sir Hugh Clifford, who, with his colleagues and subordinates, has been working so hard to develop the resources of the great dependency in his charge, and whose carefully laid plans for its future interests have been thus temporarily dislocated by circumstances beyond the Government's control.

To revert for a moment to the Agricultural Department, I should like to say that what has impressed me most regarding its cotton work is the striking and complete success with which American (Allen) cotton has now been established throughout the extensive northern province of Zaria and in many parts of the adjoining provinces of Nassarawa, Nupe, Kano, and Sokoto. The credit of this must, however, be shared, as the Agricultural Department would no doubt be the first to admit, with the British Cotton Growing Association, whose guarantee has been one of the greatest mainstays of the industry, and with the Political Officers, whose influence for the most part has been both freely and fairly used to induce the natives to plant exotic seed.

Interesting and satisfactory results have also been achieved, considering the limited staff and funds hitherto available, on the Government experimental farms, such as those at Moor Plantation near Ibadan and at Maigunna near Zaria. When I visited Maigunna I saw, among other exhibits, individual plants of "Allen" cotton which had been bred to yield a beautifully fine lint fully  $1\frac{1}{2}$  inches long\*

\* I am not forgetful of the point, emphasized by Mr. J. Arthur Hutton in one of his pamphlets, that the market for cotton exceeding  $1\frac{1}{4}$  inches in length is comparatively limited and that what Lancashire chiefly requires is a staple of  $1\frac{1}{4}$  inches or thereabout. The Maigunna plants are, however, reared, of course, under special conditions, and I understand from agriculturists that assuming such cotton were finally established and the seed distributed, it would probably yield under native cultivation a somewhat shorter staple than the original plants.

and so even that it looked almost as if it had been clipped with a pair of scissors. Recalling that some of the Lancashire members of the Committee had asked me to send home samples of any specially interesting cotton which I might happen to see in Nigeria, I requested Mr. K. T. Rae, who was then acting as Director for the Northern Provinces in Mr. Lamb's absence, to forward a few specimens of this long-stapled Maignunna cotton to England, and I presume he has since done so. By way of contrast I also despatched, later on, a bundle of poor quality native cotton, taken at random from a load which was being marketed in Ibadan. The difference between the clean, white, long, even American lint and the harsh, short, rough, gritty, and discoloured native product affords a striking—though, of course, an extreme—illustration of the wide divergence in quality which constitutes at present one of the worst features of Nigerian cotton. I cannot too strongly emphasize the paramount importance of raising the general standard of the crop both by substituting American for native varieties wherever possible, and by the institution of scientific selective breeding, with the object of eliminating the tendency to degeneration inherent in exotic types and of evolving in due course a strain of American cotton which shall be as much at home in Nigeria as its progenitor seed was at home in Mississippi or Tennessee. If this is to be done—and the whole future of the Nigerian cotton industry, in my opinion, depends upon it—the present agricultural establishment will have to be materially reinforced, as soon as possible, by adding to it something in the nature of a cotton sub-department, including both field-agriculturists and a scientific expert of first-rate calibre. The agricultural staff as hitherto constituted has done and is doing everything it can for cotton, and, considering its numerical and financial limitations, has achieved most creditable results. But understaffed as it admittedly is, with only six men in the whole of the Northern Provinces, of whom two at least are always on leave, charged as it must necessarily be with so many interests other than those of cotton, and possessing as it does so few members who can fairly be called cotton experts, however sound and wide their knowledge of tropical agriculture generally, it is clearly impossible for the Department to devote itself to that particular crop with the degree of concentration which will be necessary if the Committee's aims are to be realized. There are numerous reputedly promising cotton centres scattered over outlying parts of Nigeria at this moment about which we know next to nothing because, owing to shortage of staff, they have never been visited by an agricultural officer, much less tested and exploited, while even on Government farms, such as Maignunna, the all-important experimental work has to be entrusted at present to native (West Indian) overseers, subject

to such temporary and occasional European supervision as departmental exigencies will allow. I have said already, and I cannot repeat it too emphatically, that every credit is due to the Agricultural Staff and its Directors, Mr. Lamb in the north, and Mr. Kirby in the south, who with the co-operation of the Political Officers and of the British Cotton Growing Association have built up the Nigerian cotton industry to its present stage. The results are altogether encouraging as far as they go, but if they are to be consolidated and extended, on a scale commensurate with the Committee's hopes and with Lancashire's needs, an adequate staff must be provided. The cost of the requisite personnel will, of course, be fairly substantial, but not, I think, greater than can be financed without appreciable difficulty, and I may add that it is only in this direction that I see immediate necessity for any considerable outlay.

I will not pursue this part of the subject further at present, since it belongs properly to the constructive part of my report, in which, after discussing the situation with the Acting Governor, I have formulated detailed proposals as to the lines on which the organization of the new cotton staff might proceed, the number of officers required, the rates at which their salaries might be fixed, the sources from which they might be financed, and other relevant particulars.

7. THE POLITICAL STAFF.—This consists of 7 Senior Residents, 26 other Residents, 151 District Officers and Assistant District Officers, and 84 Probationers; making 268 members in all. The position occupied by this branch of the service relatively to such schemes as the Committee has in view is, of course, quite different from that of the Agricultural Department. The members of the staff are purely political and administrative officials, and their activities can only affect the future of cotton in an incidental way, nor, of course, can there be any question in this case of strengthening the staff in the special interests of any particular industry. While, however, I am as far as anyone could be from suggesting that Political Officers should be asked to do the work of cotton agriculturists or any part of it, the position occupied by these officers in relation to the native community is such that, if it is desired to influence the latter in any particular direction—whether in regard to cotton growing or anything else—the best and surest and fairest way to do it is to enlist the sympathetic co-operation of the provincial Residents and their Assistants, and to work as far as possible with and through them. I regard this as of so much importance that I shall perhaps be excused if I attempt to place before the Committee, in such detail as a few sentences can compass, some of the factors which make the Political Service the virtual keystone of everything relating to native affairs.

The duties of these officers bring them into touch with tribal life



more continuously, intimately, and completely than is the case with any other public servants. Their influence may be exercised either mediately through the Emirs, or other native rulers, in those provinces which have attained to a certain degree of self-government, or immediately, as in the more backward parts of the country where there are as yet no indigenous chiefs capable of administering local affairs. But in effect, whether directly or indirectly, the Political Officer, within the boundaries of his own province or district, discharges practically all the functions of paternal government. His powers, of course, are clearly defined and are subject to various checks and controls from Headquarters, but nevertheless in the eyes of the natives, especially in the remoter districts, he stands as the visible representative of constituted authority. It is to him, primarily, in the wilder parts of the country, ultimately in the self-governing provinces, that the people are taught to look for advice and assistance in all their difficulties, and if he does his duty rightly there is nothing in their daily lives which will be too complicated for his patience or too trivial for his concern. It is an essential part of his office to act not only as their ruler, but as their "guide, philosopher, and friend." He is required to qualify himself in their languages, study their customs, interest himself in their pursuits, and travel constantly among them until his name is a household word and his presence familiar in every village within his jurisdiction.

The above is, of course, only a very rough indication of a Political Officer's position and functions, but I think the Governor of Nigeria would agree that as far as it goes it correctly represents the ideal towards which such officers are expected to conform. It will be readily understood, then, that mixing continuously with the natives on this homely and thoroughgoing basis, while backed at the same time by the weight of official authority, the Political Staff wields great local influence. Naturally the extent of this influence varies with individual character, but, taking British Political Officers as a class, whether in Nigeria or elsewhere, I think it can truly be said of them that they deserve and possess the confidence of the people over whom they preside, and that where it is desired to encourage the native community to special efforts in some particular direction, as in this case with regard to cotton-growing, the help which these officers are in a position to render becomes quite invaluable.

8. **THE NATIVE ADMINISTRATION.**—A distinctive feature in the political system of certain parts of Nigeria, notably in the northern Emirates, is that the administration of native affairs there is entrusted in a large measure to the local Emirs themselves, under the general supervision and guidance of the British Residents, whose contact with the mass of the native population is therefore some-

what less direct, though not, on that account, less effective, than in districts where the authority and responsibilities of the native chiefs are more circumscribed.

I believe I am correct in saying that these Emirs come for the most part from the stock of the Fulani, a remarkable people, who had established themselves as overlords among the indigenous Hausas before the advent of British rule, and who exhibit a degree of political aptitude which fully justifies the policy of the Nigerian Government in preserving to them a substantial measure of their ancient authority, subject to such checks and safeguards as the situation requires.

In those parts of Africa where my previous experience lies no such system exists, or could exist, at present, nor does it obtain as yet in the southern parts of Nigeria itself except, under a somewhat modified form, in the provinces of Oyo and Abeokuta, and, to a partial extent in Benin. I found this system of native self-government extraordinarily interesting because so much in contrast with what I had been accustomed to on the other side of Africa, and I lost no opportunity of studying it as closely as I could. The delegation of executive, fiscal, and judicial powers to African natives manifestly requires very cautious handling, but, in those provinces where the intelligence of the native chiefs makes it practicable and appropriate (and the Nigerian Government wisely confines it to such provinces) it is unquestionably a very convenient arrangement, to say nothing of its educative value. Thus, as regards the particular interests with which I am now dealing—the interests of cotton—it will readily be understood that the influence of the Emirs affords an ideal channel for reaching the mass of the native cultivators and for conveying to them general instructions, advice, and encouragement. But however important the position of these native rulers may be, we have to bear in mind that their general policy is guided by the Political Service which stands behind them, and acts as their mentor, so that it is to the officers of that Service that cotton agriculturists and propagandists ought to look—not, as I have said already, to do their work for them or any part of it—but to establish touch between them and the natives whom they wish to reach—and this is equally true whether the influence of the Political Officers is exercised mainly through native chiefs, as in the northern Emirates, or by more direct methods.

There remains one point in connection with this subject on which I may touch in passing. It is obvious that wherever you have a system of government under which large powers are delegated to native potentates you have machinery of a kind which can easily be used for purposes of compulsion—I do not mean compulsion in its grosser forms; there is no question of that—but you have a state

of things under which the zeal of the native ruler may at times outrun his discretion and lead him to try and compass a legitimate end by too arbitrary methods. Needless to say, the Government of Nigeria can be relied on to check any tendency of that kind, but, since I am writing this report as the representative, temporarily, of the Empire Cotton Growing Committee in Nigeria, I wish to add explicitly—and I feel sure that in doing so I am saying what the Committee will emphatically endorse—that the application of methods savouring of undue constraint is the last thing which any of us would wish to see and the last thing, in the long run, to benefit cotton or anything else. Twenty years' continuous experience in governing African natives has taught me that it never pays to hustle them or try to take short cuts with them. If the cotton industry is to be soundly established in Nigeria on an extended basis, it can only be done by enlisting the interest and confidence of the peasant farmers and by satisfying them that cotton is in fact a reliable and profitable crop to grow. Every acre planted in that spirit is worth a hundred put in—I don't say under duress—but reluctantly, perfunctorily, out of the mere instinct of obedience to a superior will.

That, however, is a very different thing from saying that the natives are to be left entirely to their own devices. They are for the most part—at any rate in the remoter districts—simple, ignorant folk, often ultra-conservative in habit, shrewd enough in their way, yet with little capacity or opportunity of realizing for themselves the possibilities which may underlie new forms of enterprise. In fact, they are in a pupillary state, and, if they are to develop the country in which they live to the fullest advantage, *the initiative must come from outside*; they must be sustained and guided by some wider experience, some higher intelligence than their own.

It will be seen from the foregoing paragraphs that Nigeria is, in many respects, a peculiarly promising region from the point of view of the Committee's objects, possessing as it does enormous areas suitable for cotton, a sympathetic Government, intelligent native chiefs, a dense subject population, peaceable internal conditions, and sea-ports within a shorter distance of Liverpool than those of any other cotton growing country in the British Empire.

In the next section of this report I shall examine certain difficulties and limitations which tend at present to retard the expansion of the Nigerian cotton industry; I shall try to indicate broadly the lines on which I think they could best be dealt with; and I shall submit some suggestions as to the means by which existing facilities might perhaps be turned to fuller advantage.

## PART II

### CRITICAL AND CONSTRUCTIVE

1. **STRENGTHENING OF THE AGRICULTURAL DEPARTMENT.**—I have already referred in the descriptive part of this report to the constitution of the Nigerian Agricultural Department as it now exists, and, while paying a passing tribute to its work, I have said that, if the Empire Cotton Growing Committee's aims are to be realized, the staff of this Department must be substantially reinforced as soon as possible. In this I understand that the Nigerian Government concurs, and from the terms of the Committee's Report to the President of the Board of Trade it is evident that its members are of the same opinion. Before any steps can be taken, however, to put such a policy into effect various specific points will have to be settled. I will now deal with these separately.

2. **DUTIES OF THE NEW STAFF.**—The first question that arises is whether the extra staff now under consideration should be employed solely in the interests of cotton or upon general agricultural duties. As to this I am clearly of opinion that—apart from such additions to the general agricultural establishment as may be contemplated by the Nigerian Government—it is essential to the Committee's purposes that an adequate number of agriculturists should be appointed *in the special interests of cotton*, and that the time and energies of these particular agriculturists should be devoted primarily and, as far as possible, exclusively, to that crop. When I say exclusively, I do not mean, of course, that they should actually ignore all other forms of cultivation. That would be a stupid as well as an ungracious suggestion. The more they can help the general interests of Nigerian agriculture, consistently with the proper performance of their special duties, the better, and it is, moreover, evident that in such a country no man can hope to make himself thoroughly competent to deal with an individual crop like cotton unless at the same time he studies to some extent the habits of other crops which compete with it. I am, however, satisfied that, while not seeking in any way to tie the hands of the Nigerian Government or fetter its discretion unduly, we should ask it to agree to these additional officers being regarded as a special cotton staff, and to their being employed accordingly, as far at any rate as the exigencies of the service\* admit.

\* Such, for example, as sudden illness, or any similar cause, necessitating the temporary transfer of a cotton agriculturist to general duties

Assuming that arrangements are ultimately made on this footing, it would seem to be in accordance with the principles already enunciated by the Empire Cotton Growing Committee that the Nigerian Government, if it so desires, should be relieved of the cost of financing the new appointments. I will, however, deal further with that part of the question later on (see paragraph 10, *infra*).

3. NUMBER OF COTTON AGRICULTURISTS REQUIRED.—As to this Mr. Lamb recommends six for the Northern Provinces, and I do not think a total of twelve for the whole of so large a country as Nigeria would be at all excessive, since we must bear in mind that a certain proportion would always be absent on leave—normally about four, which would only provide for eight men permanently on duty. At the same time, I am not quite clear at present how far the Nigerian Government or the Committee, taking into account other claims on their resources, would feel justified in going, as regards expenditure under this head. The point is one of detail, which can be settled between the Government and the Committee in due course. I trust that it will be found possible to provide a staff of twelve, but meanwhile, for the purpose of arriving at a provisional estimate of costs (see paragraph 9, *infra*), I have taken the number at ten only. This, in my opinion, should be regarded as an irreducible minimum.

As to rates of pay I think the cotton agriculturists should receive the same remuneration as officers holding similar positions on the staff of the existing Agricultural Department. This (on the revised and improved scale introduced since the war) commences, I understand, at £480 a year, rising by annual increments of £30 to £720.

4. WHERE TO FIND SUITABLE CANDIDATES.—The Nigerian authorities commented with some emphasis on the difficulty likely to be experienced in procuring suitable men for the posts now under consideration. It is, of course, a difficulty which I fully appreciate, but at the same time we cannot allow it to be insuperable without knocking the bottom out of this or any other scheme. It is one of the *conditiones sine quibus non*.

Mr. Lamb remarked that his own experience lately with young agriculturists fresh from college had been very disappointing; that several of these youths in succession had developed "nerves" and had had to be sent home; and that he thought it would be advisable, as regards the proposed cotton agriculturists, to try and get men with previous experience of tropical conditions, even if that should involve some sacrifice in the matter of technical qualifications. He went on to observe that owing to the heavy depression in the rubber trade, for example, many assistants on rubber plantations were now out of employment, and that among these it should be possible to

find a few capable men accustomed to the tropics who, after a little training in Nigeria, would make good practical cotton agriculturists.

This suggestion is worth consideration, and I have thought it over accordingly, but I see a good many drawbacks to it. When it becomes necessary to effect staff reductions it is naturally not the best men who are chosen for retrenchment, and though, of course, we cannot expect to get together a faultless staff for our cotton operations, we do not want quite the type of man whom a plantation company would select for priority of discharge on a forced reduction of its establishment. No doubt among such men there are some who are quite excellent, and who would suit our purposes very well, and it is of these that Mr. Lamb was thinking. But the compulsory cutting down of personnel which follows a "slump" is bound to let loose a number of employees not of the stamp we require, and among these it would, I am afraid, be very difficult to pick the few really capable and trustworthy men who might chance to find themselves temporarily out of work.

References in such a case cannot, in my experience, be very confidently relied on, for an employer who has to turn men away in circumstances of that sort always hopes they will find work elsewhere, and will do what he can to help them to it, partly out of good nature, and partly from a desire to get them off his hands. The result too often is that one takes a man who may have been represented, quite truthfully, as possessing various excellent qualities, but who proves, upon trial, to have some incorrigible defect—an uncontrollable temper with natives, it may be, or something of that sort—about which nothing was said and which goes to the root of the matter and spoils everything.

I do not wish to push this argument beyond fair limits, for I quite recognize that it may be possible to pick up first-rate men in this way, now and then, if one goes about it cautiously; and I can fully sympathize, too, with Mr. Lamb's feelings as regards neurotic young candidates who accept colonial appointments, put their employers to all the trouble and expense of bringing them out, and then, after wasting their own and the public time for a few months, develop hysteria or something of the kind, and have to be sent home again. They are exasperating people, but such cases occur in every tropical country, in a small, more or less constant proportion, and always will. It is true that the life of a young agriculturist on a remote pioneer station would be hard, solitary, and comfortless, but not more so than that of the Political Officers who administer such outlying districts.

5. **NATIVE STAFF.**—Besides European officers provision will have to be made for increasing the number of native cotton propagandists and instructors. I attach a good deal of importance to the establish-

ment of an adequate corps of native assistants. They have been tried already with very fair results, and, as soon as a regular staff of European cotton agriculturists has been formed, they will be able to take the training of such natives in hand more thoroughly than has been possible hitherto. As with all African natives, however, it is essential that these men, after being taught their work, should be kept to it under systematic European observation and control, otherwise they may do more harm than good. Their numbers should not, therefore, exceed what is compatible with effective supervision, and will depend, of course, on the number of European agriculturists appointed.

As to the cost of the native staff, it is difficult just at present to submit an exact estimate. Native rates of pay have lately fluctuated a good deal in Nigeria. They rose considerably during the war and the subsequent trade "boom," but are now showing a tendency to drop. It must be borne in mind, however, that agricultural work is not very popular with intelligent natives possessed of any sort of education, most of whom prefer clerical employment in the larger townships to the comparatively solitary and arduous life of a cotton instructor. If we want to attract suitable men, therefore, we shall have to offer fairly liberal wages.

6. CONTROL.—A question of considerable importance is whether the new cotton staff should have a Superintendent of its own, responsible to the Director of Agriculture in a general sense only, or whether it should be under the Director's immediate supervision. Both Mr. Lamb and Mr. Kirby (Acting Director for the Southern Provinces) favour the latter alternative, and on the whole I am disposed to agree with them—at any rate for the present. The scheme in view is, after all, more or less in the nature of an experiment, and we cannot as yet foresee exactly how it may develop. Apart from this there is another consideration which ought, I think, to be taken into account. The only persons at this moment who have special local experience of cotton in Nigeria outside the British Cotton Growing Association (and the activities of the latter are concerned rather with marketing than cultivation) are to be found among the senior officers of the existing Agricultural Department, who, though they can hardly be called cotton experts in the strict sense of the term, possess a sound practical acquaintance with the crop in its general aspects, combined with an intimate knowledge of local routine and of the nature of the country and its inhabitants, such as it would take a newcomer years to acquire.

I have not the least doubt, of course, that if a new Cotton Superintendent were brought in from elsewhere he could look confidently to the officers in question for the advice and assistance which their local experience qualifies them to give. But it would be useless to



pretend that these officers could continue then to take the same part in developing the cotton industry that they take now. Manifestly they could not. The very object of appointing a Superintendent would be to relieve them of most of their present responsibilities as regards cotton. If and when such a Superintendent is appointed he must be treated as the responsible authority in all matters relating to the organization and working of the cotton staff, otherwise there would be no use in having such an officer at all. At this juncture, therefore, when we are merely proposing to make a tentative start with a limited number of cotton agriculturists, all of whom will be new men, it would, I think, be inadvisable to bring in, at the same time, an equally new Superintendent who would be as much a stranger to the country as themselves.

I may explain that in speaking of the cotton staff in the above connection I have had in mind only field agriculturists—that is to say, young men possessed of a good, sound professional training, who could be attached to the general agricultural staff in Nigeria for a year or so in order to acquire the necessary local experience, and then employed in ordinary field work, propagandism, seed distribution, and so forth. Scientific research is a different matter, and I shall deal with it in due course. Whoever may be appointed to carry out such research work in Nigeria in the interests of cotton will doubtless be a man of very high scientific qualifications, and will occupy a special position. He should have nothing to do with ordinary routine and should be given as free a hand as possible. But the duties which will fall to the young cotton agriculturists, whose case we are now considering, will be substantially of the same kind as those which have been discharged hitherto by the general agricultural staff, and I see no reason, therefore, why they should not be controlled from General Agricultural Headquarters for the time being.

I must add, however, that I advise this only as a temporary measure, subject to reconsideration when the proper time arrives. Having regard to the magnitude of the operations at which the Committee ultimately aims, taking into account that its avowed hope is to make Nigeria, if possible, one of our chief substitutes for the cotton States of the American Union, it is evident that the new staff must be regarded as the modest nucleus of what may conceivably develop into a more complicated organization than we could fairly expect any Director of Agriculture to supervise without expert assistance, burdened as such an officer must always be by a multitude of general duties scarcely, if at all, connected with the particular interests we are now considering.

I am clearly of opinion, therefore, that, if the results attained, after a reasonable experimental period, prove such as to justify the

permanent retention and possible enlargement of the proposed cotton staff, it should be organized in due course as a distinct sub department under its own chief, who, while responsible generally to the Director of Agriculture, would have a free hand within his own sphere.

**7. SCIENTIFIC RESEARCH: SEED SELECTION AND PLANT BREEDING.**—This is clearly a matter of the very greatest importance, since it is only by such means that we can hope to evolve a strain of cotton thoroughly suited to Nigerian environment, and exhibiting at the same time the particular qualities as to length, strength, colour, texture, and so forth, which Lancashire requires, coupled with the highest acreage-yield and lint-percentage attainable under Nigerian conditions.

If once we can succeed in breeding and fixing such a strain (or rather strains, for different parts of so large a country may require different types of cotton, and experiments should be conducted both with indigenous and exotic varieties), then it will be a simple matter to disseminate the resultant seed throughout all suitable areas by means of supply-farms established for that purpose. The benefits which would thus accrue to the local cotton industry are almost incalculable. In another part of this report I have touched on the point that one of the greatest bugbears which hang about the industry at this moment—namely, the cost of transport—is due largely to the fact that hitherto we have had to deal in Nigeria with cotton of highly irregular and uncertain quality, much of it, especially in the south, being rough-and-ready indigenous produce of very mediocre value, with a low acreage-yield and ginning output—the class of cotton which, before the war, was absorbed chiefly by the States of Central Europe, but which is now almost a drug in the market, and consequently cannot stand the comparatively high transport charges which obtain in many parts of Nigeria.

By so much, therefore, as we can improve the quality of this cotton we shall not only raise its market reputation but we shall go far towards solving the vexed question of auxiliary transport (*i.e.*, transport from the farm to the railway), which at bottom, after all, is mainly a question of expenses. Transport will always be forthcoming in one shape or another for any industry that can afford to pay for it, and what we have to do is to try and breed a strain of cotton valuable enough to be worth carrying not only when prices are high, but when they are low, and not only where transport is comparatively cheap, as in the north, the land of pack animals, but where it is comparatively costly, as in the south, the land of motors and of human portorage.

This year, almost without an effort, the single southern province of Oyo has produced 19,000 bales of exportable lint—that is,

24,000,000 pounds of seed cotton—and the Resident, Captain Ross, states, what is undoubtedly the case, that this is the merest fraction of what that one province is capable of growing. But all this Oyo cotton, and practically the whole of the southern crop, is indigenous stuff of rough mixed quality, of which the average local value in the present state of the market probably does not much exceed 1d. a pound or thereabout. Now a very simple calculation will show that you cannot carry cotton worth 1d. a pound at 1s. 6d. or 2s. per ton-mile, which is roughly the cost of transport by motors or human portorage, without coming to grief over the transaction. It is true that the cotton I have been speaking of has found transport this year—but why? Because the British Cotton Growing Association has been buying it at more than three times its real value. Evidently we cannot expect them to go on doing that, and if market conditions remain as they are and the Association's guarantee drops, as in that case it must (and I believe now has), what is to become of all this mass of mediocre produce? Unless it is worth bringing in it is merely surplusage and a source of embarrassment—yet we can hardly refuse it wholesale without gravely imperilling the future of the industry. It has been grown, after all, at our request and by our advice. If, at this juncture, when we have been exhausting our powers of persuasion for years to induce the native to cultivate this particular crop, we were to turn round just as he is really beginning to do so and suddenly say, "Go slow with your cotton; not so much of it," then I am afraid the results might be unfortunate.

I have suggested elsewhere in this report various means by which the costs of transport might possibly be reduced, but the most important step of all, as it seems to me, is to improve the intrinsic quality and value of the cotton itself, and so enable it to bear, if necessary, heavier charges than it can now endure. Let us take, for example, those 24 million pounds weight of seed cotton which have been produced in the province of Oyo this year. Let us suppose—it is not an extravagant proposition—that this indigenous stuff were replaced, wherever possible, by the much more valuable American "Allen," or any similar variety; and let us assume further that the breeding of both these strains, native and exotic alike, was taken in hand by a specialist of first-rate calibre until he had secured and perpetuated, in both the foreign and indigenous types, the highest acreage-yield and lint-percentage, the best length, strength, colour, and texture of which Nigerian conditions will admit—what would be the difference in value between the crop then and the crop now? It is difficult to say exactly, but beyond all question it would be very great—sufficient probably to relieve us of all anxiety about the costs of auxiliary transport, and if we can do

that we shall get rid of almost the only difficulty that can strangle the Nigerian cotton industry. I do not think we need be unduly afraid of the various other obstacles which have been cited from time to time. I have examined them at close quarters now, and though, of course, they cannot be ignored, I am satisfied that they are not so formidable as they look at a distance. I do not believe, for instance (and I have given my reasons elsewhere in this report—see paragraphs 29 and 30, *infra*), that exportable cotton has very much to fear from its so-called local rivals, such as palm-produce, cocoa, ground-nuts, and so forth, nor even from native textile manufactures. But the question of auxiliary transport is *vital*. We can tackle it in two ways—directly, by trying to get transport charges down; indirectly, by trying to get the intrinsic value of Nigerian cotton up. Neither means should be neglected, of course, but personally I believe that the salvation of the industry lies mainly in the latter direction.

I must apologize for the length at which I am developing this theme, but if I have somewhat laboured it, it is because I want to pave the way for the statement which I am now going to make, that in dealing with this one supremely important matter of scientifically improving the quality of Nigerian cotton we simply cannot afford to employ any but an expert of first-rate calibre. In everything else, as will be seen from this report, I have advocated none but quite moderate scales of expenditure: but for the scientific breeding of cotton we must, I think, get a man of exceptional qualifications, and if we do we shall have to pay him accordingly. After all, the object of the Committee, as I have remarked already, is to try and make Nigeria one of our chief substitutes for the cotton belt of the American Union, and, if we are going to attempt that, we must, I suppose, take a leaf out of the book of the United States themselves, which have never hesitated to pay outside figures for matured scientific attainment.

I do not suggest, of course, that we can, or should, offer in Nigeria the same remuneration which the highest class of experts receive in America. The relative cost of living must be taken into account, and a man can subsist quite comfortably in West Africa on a fourth or fifth part, probably, of what it would cost him in the United States. But, on the other hand, we have to remember that the climate of West Africa is enervating and even dangerous; that service there means exile from most of the things that are commonly supposed to make life worth living; and that probably few of the Europeans now resident in the country, attractive as it is in many ways, would remain there if they could be sure of finding congenial employment, at the same remuneration, in a less trying environment.

Now such a specialist as I am thinking of is in a peculiarly inde-

pendent position. The supply of such men is always far smaller than the demand for their services—indeed it is quite possible that we might have to look to America itself for the class of expert required. One would prefer, naturally, to employ a fellow-countryman if that should be practicable, and perhaps it may be so. But we have to remember that the particular type of middling stapled cotton which we want to establish in Nigeria is itself of American origin—a product of American conditions and American science—and that its breeding is therefore more or less an American speciality.

As to the question of salary, I have no idea what it would take to induce a cotton scientist of really eminent ability and experience, whether British or American, to spend several years in a country like Nigeria. The opportunities open to such men are so great that probably no remuneration which it would be possible for the Committee to consider would in itself be a sufficient attraction. But for a keen and enterprising man the novel opportunities of research which West Africa affords might well turn the scale, if the salary offered were anywhere near commensurate with his attainments. I have therefore put this salary down in my tentative estimates (see paragraph 9, *infra*) at £2,000 per annum.

When I was considering this question in Nigeria it occurred to me that the Protectorate Government might conceivably take the objection that, however great the special skill and knowledge of such an officer might be, it would not do to pay him at a higher rate than the head of the official Agricultural Department, who is the Governor's constitutional adviser on all agricultural questions arising within the colony. I do not think, personally, that such an objection would be well founded, for a specialist, temporarily engaged on scientific work, requiring qualifications of an altogether exceptional kind, occupies a position fundamentally different from that of the members of the ordinary Civil Service, and it is rarely possible, therefore, to adjust his remuneration by the standards applicable to the permanent staff. However, I took the opportunity, when I was at Lagos, of consulting the Acting Governor, Mr. Cameron, on this point, and I am glad to say that his view regarding it is the same as my own. Assuming, therefore, that Sir Hugh Clifford concurs, no difficulty arises in this respect.

8. PENSIONABLE OR BONUS RIGHTS.—In addition to salaries there is the question of pensionable rights or rights in lieu of pension. Except in the case of the scientific expert, whose appointment has been discussed in the preceding paragraphs, and whose position, as I have said, will necessarily be a special one, it will doubtless be agreed that the new officers—that is to say, the ordinary cotton agriculturists—should be put, as far as circumstances admit, on the same level, both in the matter of salaries and otherwise, as those

holding corresponding appointments in the existing Government service. The position of these agriculturists will, however, be somewhat indeterminate at first, because we cannot yet foresee exactly how our contemplated operations are going to develop. I have every hope that results will prove such as to justify the permanent retention of the cotton agriculturists, and, in that case, there seems to me no doubt that pensionable rights will eventually have to be attached to their posts, so as to bring them into line with other permanent appointments. On the other hand, it is conceivable that the project we have in view may not be attended with the success we hope for, and that the cotton staff may ultimately have to be withdrawn. I trust that will not be so, and I do not for a moment think it will—but it is a contingency to be taken into account.

I would suggest, therefore, that the cotton agriculturists be appointed, in the first place, for a specific period, which we may call the experimental stage of our operations, say four or five years—I should recommend not less than four, on the assumption that the first will be spent in acquiring local experience, studying the native language, and so forth, which would leave three clear years for actual field work. The understanding should be, I think, that, at the end of that period, the position will be reviewed in the light of the results attained; that if it should then be decided to place the posts in question on a permanent and pensionable basis the officers holding them at the time will be eligible for final appointment to them, but that, should they be retrenched, the occupants will receive a bonus.

In any event the prospect of the cotton staff being actually thrown out of employment can hardly arise, whatever the result of the Committee's operations may be, for even should these prove unsuccessful and be ultimately abandoned, which is unlikely, any members of the staff who had proved themselves to be competent agriculturists, and who desired to continue their service, would almost certainly be absorbed into the regular Government establishment, either in Nigeria or elsewhere.

9. **ESTIMATE OF COSTS.**—Assuming that staff arrangements are ultimately made on the basis of the foregoing suggestions, the costs may be estimated approximately as given on p. 80.

The expenditure shown under the head of "Salaries of Native Staff" (i.e., native cotton propagandists, instructors, etc.) and under that of "Native Labour" (e.g., wages of unskilled workers employed on experimental and pioneer plantations) can only be very roughly estimated. For the sake of convenience I have calculated the annual outlay under these heads on an average basis, but, in practice, the expenditure on labour will probably be negligible during the first season, and will increase as soon as the new European

agriculturists have completed their preliminary local training and become fit to superintend practical work in the field.

<i>Head of Expenditure.</i>	<i>1st Year.</i>	<i>2nd Year.</i>	<i>3rd Year.</i>	<i>4th Year.</i>	<i>Totals.</i>
	£	£	£	£	£
Salaries of, say, ten cotton agriculturists at £480 rising by £30 per annum - - -	4,800	5,100	5,400	5,700	21,000
Salary of cotton scientist - - -	2,000	2,000	2,000	2,000	8,000
Salaries of native staff; average per annum, say - - -	1,300	1,300	1,300	1,300	5,200
European passages; average per annum, say - - -	450	450	450	450	1,800
Native labour; average per annum, say - - -	1,500	1,500	1,500	1,500	6,000
Incidentals, say - - -	500	500	500	500	2,000
<b>Totals - - - -</b>	<b>10,350</b>	<b>10,850</b>	<b>11,150</b>	<b>11,450</b>	<b>44,000</b>

In deciding what number of agriculturists are required the necessity of providing leave reliefs must be taken into account, and the procedure should therefore be to determine *first* the strength at which it is desired to maintain the actual residential staff, and *then* to add the extra proportion necessary to furnish the reliefs. I assume that the cotton staff will come under the existing leave regulations of the Nigerian Government, in which case the European members of the staff will be required, I understand, to complete eighteen months residential service before proceeding on leave. The possibility that sick leave may have to be granted in some cases should, however, be taken into account. I have estimated provisionally for ten European agriculturists, but in all the circumstances I think a staff of twelve would probably be advisable if financial considerations admit, for, in a country like Nigeria, unforeseen emergencies are very liable to occur, and it is of great importance that such an undertaking as we have in view should be guarded against the interruption and dislocation which result when staff arrangements are upset by sudden illness or other incalculable factors.

It will be seen that the tentative estimates submitted herewith provide for a total expenditure of £44,000, spread over a period of four years, which is equivalent to an average annual expenditure of £11,000. These estimates cover salaries, passages, labour, and incidentals, but not housing and travelling expenses within the Colony and Protectorate. I have limited the estimates to a period of four years because, as already explained, I think that period, at least, should be earmarked as the experimental stage of our enterprise. At its expiration the position should be carefully reviewed

in the light of the results attained, and it should then be possible to judge, with some confidence, whether further expenditure would be justified.\*

10. FINANCIAL PROPOSALS.—Since the new staff is to be employed in the direct interests of the cotton growing industry and with the specific object of extending that industry more rapidly and on a greater scale than the Colonial Government would ordinarily have contemplated, I was quite prepared to be met in official quarters by the view that Nigerian funds should not be called upon to meet, unaided, the financial liability which the new appointments will involve. Had that position been taken I should have suggested to the Committee that it might consider the propriety of defraying the actual salaries of the European officers concerned, together with what I may call, for want of a better term, "external costs," such as leave-pay, passages, etc., and that the Nigerian Administration should be asked to accept responsibility for "internal costs" only—*e.g.*, housing, medical attendance, and travelling expenses incurred within the Colony and Protectorate—it being understood, of course, that any officers appointed in pursuance of this, or any other arrangement would be placed under the full control of the Nigerian Government, in the same way and to the same extent as any other branch of the Nigerian public service.

This was, in fact, one of the few questions which I had time to discuss—though only superficially—with Sir Hugh Clifford, during our short conversation on the railway prior to His Excellency's departure on leave. On my return to Lagos I went into the matter at considerable length with the Acting Governor, Mr. Cameron, who stated that, while the remuneration of the proposed scientific expert, being in its nature a special item, appeared to be an appropriate charge upon other than colonial funds, he thought it would be reasonable in principle and more convenient in practice that the Government should undertake all financial responsibility in the matter of the ordinary cotton agriculturists. At the same time Mr. Cameron expressed his belief that Sir Hugh Clifford would endorse this view.

Assuming that to be so, it only remains for me to point out that an arrangement on the basis indicated would relieve the Committee of all liability as to a sum amounting—in respect of salaries and passages alone—to more than half the total outlay covered by my provisional estimates, while in the event of such items as native

\* Since the above was written I have observed that my estimates provide for the salaries of all the cotton agriculturists during the first year. In practice, however, all these agriculturists would not be sent out together, since, if they did, all would become due for leave at the same time. An interval of six months or so would therefore probably elapse between the appointments of the first and second contingents.



staff and labour being included in the services for which the Nigerian Government desires to provide—and they are items necessarily pursuant to and *ejusdem generis* with the appointments of the cotton agriculturists—then there will be practically nothing left for the Committee to defray beyond the expenses of the scientific expert.

The attitude of the Nigerian Government in this matter seems to me eminently helpful and generous, and is quite in accord with the sympathetic interest which it evinced throughout in the objects of my mission.

11. **TRANSPORT.**—It will simplify an examination of this all-important subject if we remember that transport falls naturally into two quite separate classes—namely, (a) *Fixed*, and (b) *Flexible*.

Class (a) includes all those great permanent means of communication of which the channels have been definitely prescribed, either by the will of nature or by the act of man. The most typical examples of this class are waterways and railways.

Class (b) embraces all those kinds of transport which are not tied down to particular lines, but can be employed, now in one direction, now in another, as occasion arises. This class is very wide, and the degree of flexibility of the different units comprised in it varies considerably. Human portorage, for instance, is the most flexible of all: it can go anywhere. Nearly the same is true of pack animals. Draught animals are not quite so independent; they need roads of some sort, though quite rough ones will suffice. Motors are more exacting; they demand a smoother running surface, good bridges in place of mere drifts, and so forth. Still, even motors have an immensely wide and varied range, so that we shall be quite justified in assigning them to this class.

As these two types of transport thus differ essentially in character, so also they differ in function. The business of class (a) is to get cargo to its final destination. The business of class (b) is to feed class (a).

12. **FIXED TRANSPORT—Railways.**—In the descriptive part of this report I have sketched briefly the existing Nigerian railway system, including the line now under construction from Port Harcourt to Kaduna. It remains to be considered what possible future extensions would be most beneficial to the cotton industry, concurrently with other interests, and what prospect there is of these extensions being undertaken.

The first concern of the Government will naturally be to push on with the new line to which I have already referred, and which is known in Nigeria as the "Eastern Railway." This is an enterprise of very considerable magnitude, for, apart from the length of the line (over 500 miles), the engineering work is likely to be somewhat

heavy. The construction of the Benué Bridge, for example, will be a formidable task in itself, and, after crossing that river, the line will have to ascend to a height of some 3,000 feet, through country which will involve a good deal of rock work, and, probably, some tunnelling. Until this railway is finished, therefore, or, at any rate, until its completion is within sight, we can hardly expect the Government to embark on any further extensions. At the same time, that is no reason why the question of such extensions should not meanwhile be considered, the claims of different routes compared, and preliminary surveys carried out, so that as soon as the hands of the Government are freed by the completion of the line now under construction, further progress may be set on foot without loss of time.

Before going on to discuss, as far as I am competent to do, the apparent merits of several alternative routes which offer themselves for consideration, I should like to touch on a few general points which bear more or less on the question of railway construction in all parts of tropical Africa. In the first place, then, I would emphasize the fact that the natural fertility of the British possessions in that continent, almost anywhere you like, from Cancer to Capricorn, is far beyond what most people realize, even now. It has been said that if one took a ruler, and shut one's eyes, and drew a pencil along it through the map of any British Protectorate within those latitudes, it is a hundred to one that that railway would pay. That is an hyperbole, of course; but it has a good deal more truth in it than is usual with such generalizations. I will go so far at any rate as to say this of Nigeria, that there are at least three or four new routes in that country so promising that, if a reputable railway company under business-like management were to build along any one of them, I should not be afraid to take up some of that company's common shares.

I fully appreciate, of course, the financial stringency which the late war and its sequelæ have brought about, and the urgent necessity which they impose of cutting down all non-essential expenditure to the quick. But it is only by increased production that the waste of war can be repaired, and you cannot increase production if the means for stimulating it are withheld. As the Secretary of State for the Colonies observed in a recent speech:\* "You cannot expect any of these countries to develop until they have been given the essential fundamental apparatus which they must have—posts, railways, roads, and telegraphs." These are, in truth, the arteries of every such country. Without them its natural products, which are its life-blood, cannot circulate. The vivifying process of transmutation which takes place when there is a healthy outward flow of

\* At the Corona Club, June 16th, 1921.

raw material and a continuous returning stream of manufactured goods becomes arrested, and stagnation results.

All this is more or less a truism and pretty generally recognized, I dare say. But before I leave the subject there is one special point on which I should like to touch for a moment because—apart from more general considerations—it has always seemed to me one of the strongest practical arguments for pushing on with railway construction in tropical Africa as quickly as circumstances admit. I refer to the steadily rising wage-rate for unskilled native labour.

On the other side of Africa, when I first went there, the standard wage for such labour was actually as low as 8s. a month—it sounds absurd, I know, but it is a fact. The natives had absolutely no wants, and money meant nothing to them. By the time I left the country this rate had risen by nearly 300 per cent., and had doubled within the last six or seven years. That means that the earthworks of any future railways there are going to cost at least twice as much, proportionately, as those of pre-war times, and it also means, probably, that the longer such extensions are delayed the heavier the bill for native labour will be. I dare say Nigeria is rather more favourably situated in this respect than most of the East African group of Protectorates, because there is not quite the same demand for her manual workers. She has not got to supply the needs of large European estates and plantations like the Kenya Colony, nor to face, like Nyasaland, the competition of wealthy neighbours such as Southern Rhodesia and the Transvaal. Nevertheless, the Nigerian wage-rate has risen very considerably. Mr. E. M. Bland, the General Manager of the Nigerian Railway, whom I consulted on the point, puts the increase at from 50 to 100 per cent. over pre-war rates, and it is likely that this upward tendency will continue, subject, possibly, to such a temporary check as the present phase of trade depression may impose.

Now when one remembers the immense number of unskilled workmen who have to be employed on any important programme of railway construction, the difference in cost represented by even quite a small rise in the local wage-rate becomes a very weighty consideration indeed. Thus, for example, let us suppose that schemes are under contemplation which would employ the equivalent of 12,000 men for forty-eight months; and let us assume that, for one reason or another, the execution of this programme is deferred for five years. I think it would be a bold prediction to say that the standard daily wage-rate in Nigeria five years hence will not have advanced by a few pence—say anything between 8d. and 6d. Yet that would mean an addition of £150,000 or so to the cost of construction—a penalty of £80,000 for every year's delay—and it might well be much more.

I mention this because I have often heard it said that the present is a bad time to undertake fresh railway enterprises in Africa, on account of the high cost of imported material—steel, for instance, and concrete. It is argued that the price of such material was forced up by the late war; that it is now dropping; and that we ought to wait till it comes down farther still. I quite agree. I think that is a perfectly sound reason for postponing, as far as practicable, the construction of all parts into the composition of which such material enters—bridges, culverts, rails, and so forth. But I suggest that it is not in itself a good reason for postponing earthworks, which must in any case be completed before the superstructure can be put in hand. The position, to state it concisely, is that we have, on one side, the price of African native labour still comparatively low, but steadily rising, and, on the other, the price of imported material still comparatively high, but gradually falling. If that is an argument for anything, it would seem to be an argument for pushing on as soon as possible with the earthworks of any extension which will ultimately have to be undertaken, and for delaying the superstructural parts on the assumption that by the time the line has been surveyed, cut, embanked, and so forth, the price of the materials required to complete it will have fallen.

I do not want to burden this report too much with general matter, but I have touched on the above points because I think we ought to be able to show that we are not approaching this great question of railway enterprise in a slapdash spirit, and that, although our primary object is to further the interests of the cotton industry, we are not seeking to do so without counting the cost to the Nigerian Government.

**18. ALTERNATIVE RAILWAY ROUTES.**—I come now to the practical topic of alternative railway routes, and I may say, at once, that it is a subject which inspires me with much diffidence. It is so highly technical that I should approach it with a good deal of caution even if I knew Nigeria as well as I know some other parts of Africa. As it is, I can only speak from the point of view of a man who has travelled through the country, extensively indeed, but rapidly, and who offers his opinions subject to correction.

To begin with, then, I notice that, among the quantity of papers relating to Nigeria which were sent to me for perusal before I left England, there are frequent references to the idea of railway extensions from Kano, the northern terminus of the existing main line, and from Zaria, ninety miles south of Kano, to Maidugari in Bornu on the east, and to Sokoto on the west. I do not doubt that those who advocate the running of lines east and west in this way have thought the matter out carefully, and with fuller data probably than I possess; but I am bound to say that there appear to me to

be some very weighty *prima facie* objections to such a policy. What I mean is this: we may take it, I suppose, that the aim of any railway scheme should be to choose the shortest and most economical route for what the line, when built, will have to carry. Very well, then—let us first take the case of Sokoto. If we look at the map we shall see that Sokoto is tucked right away in the extreme north-western corner of Nigeria. Whatever Sokoto has to export overseas must go to Lagos, which is her nearest seaport. I am not thinking now of cotton only, but of ground-nuts, hides, anything that Sokoto wants to send to Europe—it has all got to find its way to Lagos first. What, then, is the shortest route from Sokoto to Lagos? Not by way of Kano evidently, nor by way of Zaria. To get from Sokoto to Kano you must travel some 250 miles, and when you have arrived there you will be no nearer to Lagos, no nearer to any seaport, than you were before you started. Nearly the same is true of Zaria—so that in effect, if you want to send produce from Sokoto to Liverpool and consign it via Kano or via Zaria, you will begin straight away by wasting some hundreds of miles of haulage.

There is, it is true, one part of the province of Sokoto (and only one) of which the natural export outlet is via Zaria—namely, the south-eastern corner, including the country round about Chafe and between there and Maska in South-Western Kano. A branch railway from Zaria through Maska towards Chafe would no doubt benefit the already flourishing cotton industry in that neighbourhood, but I hardly think it is a matter of much urgency at present. The distance is short (Maska itself is only some twenty-five miles from Zaria); there is an excellent road all the way, and cotton comes in regularly and freely by donkeys and camels, of which there is an abundant supply. In short, I think the existing railway, fed as it is by the pack transport, runs near enough to the above points to tap them effectively already.

Apart from the above, the most promising districts of Sokoto lie in the west and south-west parts of that province, round about the busy native mart of Jega and along the courses of the Gulbin-Gindi, Gulbin-Kebbi, and other tributaries of the middle Niger. I have referred elsewhere in this report to the great possibilities of this region, and of parts of the province of Kontagora to the south of it, and have quoted the opinion expressed by various authorities, and quite recently by the local manager of the British Cotton Growing Association, that this stretch of country contains what is probably some of the richest cotton soil in the whole of Nigeria. Now the natural outlet for all produce originating in any part of the above region is evidently not eastward but southward. If Sokoto is to be linked up, eventually, with the existing main railway, the point of junction should surely be, not Kano or Zaria, but Jebba, or Mokwa,

or somewhere between there and Zungeru. There do not appear to be any particular engineering difficulties in the way of such a scheme. I met with no stiff gradients in my travels through that part of the country, and there are no large rivers to cross.

It is true that a line which suits trade and industry may sometimes be in conflict with other interests—strategical requirements, for example; but the policy suggested would not seem to be open to objection on such grounds. Even assuming that circumstances should ever call for the despatch of considerable military reinforcements to Sokoto, these reinforcements, whether of men or material, would come, presumably, from the south and would have to pass through Jebba, and the distance from Jebba to Sokoto direct is less by some hundreds of miles than by way of either Zaria or Kano.

The only argument I can think of on the other side of the question is that the province of Kontagora, which lies between Jebba and Sokoto, is very sparsely populated. I have, however, discussed this elsewhere (see paragraph 31, *infra*), and have pointed out that it is due to the operations of the slave trade, and must not be taken as indicating any lack of natural fertility in the soil; that, on the contrary, the province contains a great deal of exceedingly productive land; that it is capable of supporting, and did in fact support not very long ago, a relatively large and flourishing community; and that, once it is given adequate transport facilities, there is every reason to believe that native settlers would soon be attracted to it.

I need not, I think, go at length into the pros and cons of a railway from Kano to Maidugari in Bornu, for the chief argument against it is much the same as against a line from Kano or Zaria to Sokoto—viz., that it would mean an unnecessarily circuitous route to the sea. In this case, too, there is the additional consideration that, according to the evidence of the Director of Agriculture for the Northern Provinces, and of the local Manager of the British Cotton Growing Association, the northern part of the province of Bornu, lying on the direct route from Kano to Maidugari, includes a large proportion of sterile land, and is likely to deteriorate further as the sand-drifts from the Sahara Desert advance in that direction.

The best outlet for exportable produce from the neighbourhood of Maidugari would appear to be a line running south and south-west—possibly via Yola, and so along the Benué Valley to some point on the Eastern Railway now under construction, whence it would reach the sea at Port Harcourt. This route would be far shorter than via Kano, and would, moreover, tap a region of known fertility in the Benué districts which, in spite of present transport difficulties, already produce an appreciable amount of exportable cotton.

To sum up, then, it seems to me, as far as I am in a position to

judge, that the areas which would best repay railway exploitation after the completion of the eastern line are the basin of the middle Niger adjoining Kontagora and Western Sokoto, and the valley of the Benué River, together with the Chad region,\* and that permanent transport systems, running through these areas in the directions suggested, would give the shortest available export routes for the most fertile of the undeveloped portions of Nigeria. And, conversely, it appears to me that to build railways from Kano or Zaria to Maidugari on the one hand, or to Sokoto on the other, would be uneconomical, inasmuch as it would involve a great deal of unnecessary haulage and because, moreover, a considerable part of such railways would pass through districts which professional agricultural opinion has reported to be unproductive.

I recognize at the same time that the whole subject is one on which it would be unwarrantable for a mere visitor like myself to dogmatize. I have tried to look at the matter from all sides, and have formed my opinions as carefully as possible, but I only offer them for what they may be worth.

14. WATERWAYS.—In the descriptive part of this report (see paragraph 5 (b), *supra*), I have mentioned that the fairway of the Niger is barred above Jebba by a series of rapids. This great river is deep enough, during a considerable part of the year, to float light-draught steamers right up to the French frontier, and even beyond,† so that the question naturally suggests itself whether the obstruction unfortunately caused by these rapids could not be removed in order to open a way for such vessels to the middle reaches, which drain the rich districts of Northern Kontagora and South-Western Sokoto.

Through the kindness of the Acting Lieutenant-Governor of the Northern Provinces (Mr. Palmer), and of the Secretariat at Lagos, I have been able to acquire a good deal of information on this subject in addition to what I observed personally during my travels in the middle Niger valley. The most instructive among the papers dealing with it is a long report by Captain (now Major-General) Mance, D.S.O., R.E., who visited the middle Niger and its tributaries in 1911. The report in question is concerned mainly with a statement of the advantages which, in the writer's opinion, would accrue from the construction of a railway from Jebba to Sokoto. This idea, to which I have referred already, had occurred to me inde-

\* The adverse reports on the Chad littoral made by Messrs. Lamb and Percival, and cited earlier in this report (see paragraph 4, *supra*), refer primarily to cotton. They were, moreover, expressly qualified at the time, as already explained, and even if systematic experimental tests should hereafter confirm them, the necessity for opening up the Chad region rests on other grounds than those of cotton interests alone. The point for us is that a line to Chad via the Benué would be incomparably better for cotton purposes, and, as I believe, for the general interests of the country, than a line from Kano.

† I understand that steamers ply, in fact, on the French sections of the Niger.

pendently, before I was aware of Captain Mance's views. The only doubt which I felt at that time was whether the Niger rapids could be so dealt with as to enable steamers to ascend the river, because, if so, continuous water transport would become available, as far at any rate as the mouth of the Gulbin-Sokoto, and, during the wet season, for a long distance up the latter stream, in which case, having regard to the cheapness of water carriage, it might not be economical to construct a railway in that direction at all.

Captain Mance, however, disposes of this point in very emphatic terms.\* He says:

"It is hopeless to think of improving the navigation of this section (*i.e.*, the rapids),† and a fundamental necessity for the economic development of Sokoto and North Kontagora is a branch line from the existing railway system to a point above the rapids."

The "point above the rapids" which Captain Mance selected for this purpose was Sekachi, close to Yelwa. His proposal was to run a railway first from Jebba to Sekachi; then to put shallow-draught steamers on the Niger at that point, and to utilize the waterway of the Niger itself and of the Gulbin-Sokoto for bringing produce down to the Sekachi railhead. Ultimately the line was to be carried on to Sokoto. In its main features this is, of course, a railway proposition, but, incidentally, Captain Mance's investigations throw a good deal of light on the subject of the waterways of that part of the Niger and of its tributaries.

To begin with, if we are to accept this officer's estimate of the rapids—and it is that of an experienced engineer—we must abandon all idea of steam navigation between Jebba and Sekachi (Yelwa), and must rely on a railway either exclusively or in conjunction with the waterways above that point. As to the capacity of these waterways, Captain Mance's conclusions are as follows: He states that the depth of the Niger is sufficient to float steam craft having a draught of 18 or 20 inches right up to the French frontier all the year round, and vessels drawing 4 feet "for a considerable part of the year." This estimate is, however, admittedly based, in part, on native evidence, and, before it can be accepted as conclusive, it would be necessary to have the river properly sounded. Captain Mance is of opinion that such few rocks, etc., as exist on this section of the Niger could be made safe for stern-wheel steamers by buoying and blasting in a single season.

\* By way of adding to the emphasis he prints the passage quoted in capital letters.

† It must be borne in mind that when Captain Mance speaks here of navigation he means steam navigation. It would probably be quite feasible to improve the passage of the rapids for canoes, which already traverse them at high-water, and I understand that the Nigerian Government intends, in fact, to take steps to that end very shortly.



As to the affluent streams—the Gulbin-Sokoto and Gulbin-Gindi—Captain Mance's evidence is very interesting. I know, of course, that these tributaries carry a considerable canoe traffic, but I only saw them in the middle of the dry season, and, when shooting near Argungu in March, I walked almost dry-shod across the Gulbin-Sokoto, which was then a mere chain of pools, connected by a narrow rivulet. It did not occur to me, therefore, that this stream could be navigated at any time of the year by steamboats even of the lightest draught. Captain Mance, however, states that it is practicable for vessels "of the *Swan* type" (the *Swan*, I understand, was a very small steamer, or steam-launch, then in use in Nigeria) for sixty miles up to Bunza during half the year, and that, but for a swamp between there and Argungu, which "could be cleared at a moderate expenditure," such vessels could run right up to Sokoto itself.\* At the same time, the Gulbin-Gindi, which traverses an extremely fertile country, and joins the Gulbin-Sokoto at Bunza, carries large canoes and barges as far as the important native trading centre of Jega (thirty miles) from July to February, and smaller canoes all the year round.

Incidentally, it is worth noting that even at the time of Captain Mance's researches (ten years ago) cotton was "freely grown" in Kontagora and Southern Sokoto; that the Political Officer then in charge at Yelwa reported that, but for transport difficulties, cotton would be "the staple export of North Kontagora"; and that later on a cotton market was actually started at Yelwa by the British Cotton Growing Association, and was abandoned "solely through lack of cheap transport." The general native trade of this region (Kontagora-Sokoto) has always been considerable, as is shown by the old toll-receipts, but, owing to the difficulty of getting produce down to Jebba, much of it drifts away to French territory. Mr. Gowers, now Lieutenant-Governor of the Northern Provinces, has estimated (according to Captain Mance) that "not less than a million natives would be benefited by improved transport facilities between Sokoto and the lower Niger."

I need not pursue this subject farther in the present report. The evidence given is, I hope, sufficient to show that there exists, at any rate, a fair *prima facie* case for the consideration of the Government as regards the expediency of linking up Sokoto with Jebba, sooner or later, and that, in establishing such a connection, the waterways of the middle Niger and its tributaries might be made to play a very useful part. On this and various other subjects touched upon in these pages I should welcome an opportunity of verbal discussion with the Committee, for it is impossible to treat

\* Such diminutive craft obviously could not carry much, if any, cargo themselves, but the idea was that they should tow shallow-draught barges.

such questions exhaustively within the limits of a written report. I need not add that it would be of incalculable advantage if the Governor of Nigeria, who is now on leave, could spare time to be present at such a discussion. Apart from the fact that nothing, of course, can be done in such matters except by and through the Nigerian authorities, Sir Hugh Clifford's great administrative experience and wide knowledge of West African conditions would be of the utmost assistance to us, and would serve to correct any errors into which my own limited knowledge of the country may have led me.

**15. FLEXIBLE TRANSPORT—HUMAN PORTERAGE.**—During the earliest stages of African development this was practically the only means of transport available. There was no help for it. We had no railways, no motors, no mechanical conveyances at all, nor any roads capable of sustaining vehicular traffic; while the prevalence of tsetse fly, following the vast herds of game, prevented or greatly restricted the use of pack and draught animals.

I am speaking now of the countries stretching from the Zambesi to the confines of Tanganyika as I knew them twenty-three years ago, and I suppose conditions were then much the same in Nigeria and throughout the tropical parts of the African continent. Since that time matters have improved a great deal, and human portorage is fast being replaced by other kinds of transport; but there are still very large and very fertile areas lying beyond the reach of road or rail where natives are, and must be, employed as carriers, until more civilized conditions prevail.

I quite recognize, of course, that the extension of mechanical transport systems can only be effected by degrees, and I know how keenly and sympathetically His Majesty's Government and the Administrations of our oversea Colonies and Protectorates interest themselves in this great question; but, however unavoidable human portorage may be under certain conditions, it is as well to emphasize frankly that no one of our possessions in tropical Africa, rich beyond measure though they are, will ever attain its full development, as long as, in any considerable part of it, the unit of transport is the negro's head.

Beyond the extreme adaptability which makes "head carriage," as it is called, almost inevitable in very primitive localities, there is absolutely nothing to be said in its favour. It combines, as far as I can see, every disadvantage which a transport system can exhibit. It is very slow—porters cannot be relied on to cover more than twelve to fifteen miles a day, and bad weather may delay them indefinitely; it is exceedingly expensive; it exposes produce to deterioration and loss from climatic causes, rough handling, pilferage, etc., to a greater degree than any other form of transport; it separates

natives from their homes, their wives and families, and is so unpopular with them that it is becoming every year more difficult to obtain; while, finally—and this from our immediate point of view is perhaps the heaviest count in the indictment—it is economically the most wasteful of all systems, inasmuch as it withdraws large numbers of men from the husbandry of the soil, which is their natural avocation, and thus deprives us of their help in the very field where they are most indispensable.

In this connection it must be remembered that 60 pounds or so is a full load for a native,\* and also that he requires food at the rate of some 2 pounds weight per diem, so that unless he is travelling for quite a short distance, or through districts where he can rely with certainty on supplying himself as he goes, he must take the rations he needs with him, in which case, of course, the amount of produce he can carry is correspondingly reduced. It will readily be appreciated, therefore, what a very large proportion of available human energy has to be diverted from productive labour in the fields to non-productive labour on the roads in any country or province which depends on this form of transport, and how seriously the development of natural resources must be retarded wherever men's heads, which ought to be used as intelligent instruments, are employed as mere pack saddles.†

I need not pursue this subject farther, and have only adverted to it in order to show that the improvement of transport facilities is a matter of cardinal importance, not only in the interests of cotton, but of every local industry, and that it goes, moreover, to the very root of one of the prime objects of British colonial policy—the gradual emancipation of the native from primitive conditions and the development of his activities along intelligent and productive lines.

16. **MOTOR TRANSPORT.**—Not a few of the Political Officers and others with whom I conversed in Nigeria spoke of the advisability of extending motor transport and making it the chief auxiliary means of carriage. This question presents itself under a somewhat different guise in the Northern and Southern Provinces respectively. As to the former I have no hesitation in saying that the transport of ordinary merchandise by petrol-driven vehicles at so great a distance from the coast is an untenable proposition. The cost is prohibitive.

\* It is true that some Hausa carriers will take heavier loads, but I am speaking of the average.

† During the war in East Africa (1914–1918), when we were obliged to rely chiefly on carrier transport, I made a careful analysis of the relative number of porters to fighting men, and the cost of keeping each soldier supplied with food and ammunition by this means. The result showed in a very striking manner how extremely expensive and unsatisfactory human portage is; but the figures are hardly applicable to peaceful conditions.

It might be otherwise if we were dealing with gold-dust or diamonds; but to move a crop like cotton at from 2s. to 3s. or more per ton-mile—especially when it can be brought in quite efficiently by animals for a mere fraction of that sum—is out of the question.

A striking example of the hopelessness of attempting to use motors in North Nigeria on a commercial basis, under present conditions, is to be found in the history of a motor-lorry which was detailed by the Government some time ago for the purpose of helping to bring cotton from Maska to Zaria. Though this lorry only carried a load one way, returning to Maska empty, the charge for its services was fixed as low as 1s. per ton-mile, at which rate, needless to say, it could only be run at a dead loss. Yet, nevertheless, it had to be withdrawn for lack of patronage—the animal transport killed it. Since this was the result of an experiment tried under the most favourable conditions available—that is to say, on one of the few really excellent highways in the Northern Provinces, and for a distance not exceeding thirty miles from the railway, it can be imagined how useless it would be to contemplate the employment of such vehicles for commercial purposes on inferior roads and over an extended radius.

Of course, it is possible that some cheap local substitute for petrol may ultimately be introduced,\* or even that mineral oil may some day be discovered in Nigeria, and in such an event no doubt the position would be revolutionized, though even so motor traffic, seeing that it involves the construction *and maintenance* of a more elaborate class of road than any other kind of auxiliary transport, as well as special costs in the matter of garages, skilled mechanics, and so forth, will always be a comparatively expensive business. Under existing conditions in the far Northern Provinces I scarcely regard it as worth a second thought, so far as ordinary agricultural merchandise is concerned.

In the south the position is different. Animal transport, the great mainstay of the north, does not exist in the Southern Provinces at all. Canoe traffic, again, is confined for the most part to the creeks and channels of the Niger delta, where cotton does not grow. Broadly speaking, therefore, there are only two ways by which, in these provinces, cotton can be carried from the farm to the railway. One way is by human portorage, the other is by motor transport. With human portorage I have dealt already. I have showed, or tried to show, that it is the most wasteful and unsatisfactory of all systems, and, furthermore, that its unpopularity with the natives themselves is making it constantly more precarious and difficult to obtain. Almost the only natives now regularly employed on portorage in the south are engaged by the black middlemen who still

\* The employment of some kind of gas is, I believe, under investigation.

contrive to get hold of carriers by ways and means of their own, as I have explained farther on in this report (see paragraph 28, *infra*). The reluctance of the local villagers to take up this kind of work is, however, increasing so much that, in dealing with the unusually large cotton crop which has had to be shifted this year, even the middlemen have often found themselves at a loss for porters, and (as the superintendent of the official motor service informs me) have competed eagerly among themselves to obtain freight space on the Government lorries.

It is clear, therefore, that in the Southern Provinces motor transport is already assuming the guise of Hobson's choice, and as the economic development of these provinces expands and the disinclination of the natives to carry merchandise on their own heads increases, mechanical conveyance, as far as I can see, must become more and more the only alternative. There is, however, one consideration which obviously limits the acceptance of this or any other form of transport—namely, that its cost shall not be actually greater than the industry which it serves can bear. I am unable to say of my own knowledge what this cost may be in the case of cotton, but the Nigerian Manager of the British Cotton Growing Association (Mr. Percival), who is in the best possible position to judge, puts it, on the basis of present prices, at 1s. per ton-mile. This is, in fact, the rate at which cotton has been carried by the Government lorries hitherto. It is, of course, less expensive to run motors in the south than in the north, because the shorter distance from the sea means smaller freight charges on petrol, spare parts, and so forth. Still, 1s. per ton-mile is unquestionably a very moderate tariff—the British Cotton Growing Association could not run a motor service on that basis or anything like it; and, though the Government is in a position to work such a service more cheaply than any private body, it certainly deserves our hearty thanks for carrying cotton at such a favourable rate.

I understand that there is now a question of raising this rate by 50 per cent. to 1s. 6d. per ton-mile, but I trust it will be found possible to avoid such a step. If cotton prices were soaring the position would be different, and I should then regard an increase in the Government rate as perfectly reasonable. But just at this moment, when the British Cotton Growing Association, after pluckily buying the largest crop ever produced in Nigeria at an extremely liberal figure, in the teeth of a falling market, has been forced by heavy losses to lower its guaranteed prices, I am afraid a simultaneous increase in motor freight rates, by so large a proportion as 50 per cent., would hit the southern cotton industry uncommonly hard, and might even prove the last straw.

I particularly want to put in a word for this southern cotton,

because it has reached a stage of development which, although very promising, is also very critical. It stands specially in need of attention and encouragement just now, and its fate, in my opinion, will be decided by the treatment which it receives within the next two or three years. As compared with the northern cotton it is peculiarly handicapped from the start, not only because it has no animal transport, but because, while larger in quantity, it is generally lower in quality—in other words, there is more of it to move, while, at the same time, it requires cheaper transport because it is intrinsically poorer stuff, being almost entirely indigenous, while the northern crop is largely American.

This, however, cannot be taken at present as in any way conclusive evidence that American cotton will not thrive in the south. It so happens that an unlucky choice was originally made for the Southern Provinces with "Georgian" seed, just as a fortunate choice was made for the Northern Provinces with "Allen." Now, for the first time, the south is to be given an opportunity of trying what it can achieve with "Allen" seed, of which a large consignment (500 tons) is to be distributed in the Southern Provinces this season. The experiment may or may not be a success, but it is of the utmost importance and interest, and I earnestly hope it will be possible to continue the present favourable Government rate for cotton transport until the south has had a chance of showing what it can do with American seed, especially in provinces like Oyo and Ilorin,\* where the cultivation of cotton has been established as a local industry from immemorial time, and where the natives are just beginning to grow it on a large scale for export purposes. On my return to Lagos I put the case to the Acting Governor, Mr. Cameron, who kindly promised to give it his sympathetic consideration, and I feel sure Sir Hugh Clifford will do the same. In any event, there is no necessity for an immediate decision, since this year's crop has already been harvested.

While I am on this subject I may say that one of the factors which tend to increase the cost of motor transport in the south would seem to be the lack of macadamized roads, and the consequent restriction of traffic to light lorries, which are relatively more expensive to run than larger vehicles. When I left Nyasaland we had

\* Ilorin is politically a northern, but, geographically, a southern province. The terms "northern" and "southern" as applied to the administrative division of Nigeria are in fact purely political, the line of demarcation being that which formerly separated the two Protectorates of Northern and Southern Nigeria at the time when they were administered by different Governments. Old Northern Nigeria was much larger, territorially, than her sister Protectorate in the south, and so it happens that some of the so-called "northern provinces" lie a long way south of the median parallel. These provinces are northern in a political sense, but agriculturally, climatically, and ethnologically their affinities are southern.

completed in that Protectorate about a hundred miles of macadam, solid enough to sustain lorries up to 8 tons in weight, and the result had already proved so satisfactory that arrangements were in contemplation for extending this type of highway throughout the Protectorate, with feeder roads at intervals. One cannot, of course, argue indiscriminately from one country to another, and Nigerian conditions are in many respects peculiar and characteristic. While, however, the Northern Provinces, with their cheap and abundant animal transport, can fend pretty well for themselves, the south, as I have explained, is becoming more and more dependent on mechanical locomotion, as human portage, its only other alternative, dwindles away into obsolescence. Districts like Oyo, Isseyin, and Ogbomosho, in the province of Oyo, and Kabba in the province of Ilorin, are fast reaching, if they have not already reached, the limit of what they can usefully produce with the means of transport now available. Even this year's cotton crop has only been shifted with great difficulty—in fact, some of it has never been shifted at all, as I can personally testify, for I saw quite an appreciable amount of good cotton rotting on the bushes in the Ogbomosho district. Again, take the case of Okeni in the district of Kabba, sixty-four miles south-west of Lokoja and thirty-five miles from Ajeokuta on the Niger: while the cultivation of cotton round about Okeni has been rapidly increasing, the difficulty of procuring carriers has been growing more and more acute, and has now reached such a pitch that, according to the British Cotton Growing Association, either a motor road must be made from Okeni to Ajeokuta, or else the buying of Okeni cotton will have to be discontinued altogether.

It will be seen that in all these southern cases the difficulty is one of transport and nothing else. There is no question as to the fertility of the soil; its resources are almost boundless. There is no question of the readiness of the natives to plant cotton; they have never been keener on it in their lives than they are at this moment. The one problem is how to get the crop from the farm to the railways and waterways at a cost which will enable the cultivator to receive a fair remuneration without ruining the purchaser. I have dealt already with the question of improving the quality of Nigerian cotton by selective breeding, and there are other means, which I shall shortly discuss, by which it might be made capable of bearing heavier transport charges than it can now endure. But while it is of prime importance to get the quality of the produce up, it is scarcely less necessary to try and get the cost of transport down, and this in the south is a most difficult problem, as to which I shall particularly welcome an opportunity of verbal discussion with the Committee, and, if possible, with Sir Hugh Clifford.

17. ROADRAILS.—Before leaving the subject of mechanical transport I may mention that the Governor of the Gold Coast (Brigadier-General Guggisberg, C.M.G., D.S.O.), who happened to be one of my fellow-passengers on the voyage home to Liverpool, informed me that he was a firm believer in the roadrail tractor system, which has lately been placed on the market, and that he anticipated it would go very far towards solving West African transport difficulties. I have not seen a demonstration of this system, but in case the Committee may wish to enquire into it the necessary particulars can be obtained—as General Guggisberg kindly informs me—from Brigadier-General Stronach, The Cottage, Mayfair.

18. ANIMAL TRANSPORT.—In the descriptive part of this report I have given some account of the existing native system of animal transport. Its habitat is the Northern Provinces, especially those of the far north—Zaria, Kano, Sokoto, and Bornu—where it has existed from immemorial time. Though rather slow, it is perfectly reliable, and “delivers the goods” to the railway depots at a cost incomparably cheaper than either human portorage or any existing form of mechanical transport. In short, I do not think we can do better than rely on this service wherever local conditions are suitable, though there are some respects in which we might endeavour to improve it.

In the first place, it seems to me that while the control of animal transport remains so exclusively in the hands of independent native owners as at present, the position of those who, like the British Cotton Growing Association, have to depend on this transport for getting their stuff to the ginneries and railways, must necessarily be rather precarious. As long as the price of cotton compares favourably with that of other produce, no trouble is likely to arise. But if, and when, circumstances lead to a great rush being made for some other crop, very serious difficulty may be experienced in getting the cotton harvest home. Thus, for instance, Mr. Percival informed me that, during the height of the recent ground-nut “boom,” traders who had bought heavy stocks of the nuts, and were desperately anxious to take their profits before the market should fall, practically cornered the animal transport of the Northern Provinces. The price of pack and draught beasts of all kinds was forced up to an unprecedented figure; hire was offered on a scale with which the British Cotton Growing Association could not compete, and, had the ground-nut market not suddenly collapsed, Mr. Percival estimates that less than half the northern cotton crop for that season could have been shifted.

It has occurred to me, therefore, that it might be worth while to consider whether some supplementary animal transport could not be organized and worked either by the Government or the Associa-



tion—especially draught transport. A beast of burden will pull three or four times as much as it can carry, and I see no reason why ox-carts should not be used much more extensively than they are at present. Such carts are actually manufactured now by native craftsmen in the Government technical schools at Kano and Sokoto. Those which I saw were rather on the light side for serious work, but I have no doubt that in a little time the schools in question could turn out any type of cart required, and there is an abundant supply of cattle. The natives have been so long accustomed to pack transport that it is very doubtful whether they would adopt a draught system if left to themselves, but I should have thought that a sufficient number could be trained to work a useful service under European control. I broached the subject both to Mr. H. R. Palmer, the Acting Lieutenant-Governor of the Northern Provinces, and to Mr. Percival, but neither seemed very sanguine as to its feasibility. Mr. Palmer considers that natives would not take enough care of animals not their own property. Mr. Percival is of the same opinion, and remarks that an attempt was made during the administration of Sir Frederick Lugard to establish a service of ox-waggons and that the experiment failed. This, however, was due chiefly, as I understand, to the fact that Indian drivers were employed, and proved very unsatisfactory.

A further difficulty, in the case of draught cattle, arises from the scanty amount of grazing along the main roads of the Northern Provinces. Pack animals can deviate from these roads and pick up food as they go along, wherever they happen to find it, but yoked oxen cannot, and it is argued that it would be necessary, therefore, to feed them with guinea-corn at their outspans, which would add considerably to the expenses of a waggon service. I am unable to say how far this contention is sound, but it is the case, of course, that cattle, which feed by pulling grass into their mouths by means of their tongues, require much deeper pasturage than animals which crop it with their teeth, and that the latter will often gather an ample subsistence where the former would find it difficult to live.

In view of this I asked Mr. Percival whether the grazing difficulty could not be met by using teams of donkeys. He said that such an experiment would, in his opinion, have a much better chance of success than ox-waggons, and that, if any form of draught-animal transport was to be tried, he would far rather attempt it with donkeys than with cattle. At the same time he expressed his belief that the natives, who have hitherto held the position of absolute monopolists in the matter of animal transport, would not readily lend themselves to any scheme calculated to divert the control of this transport to Europeans. I attach much weight to Mr. Percival's

views, not only on account of his intelligence and wide African experience, but because he is essentially what is called popularly a "tryer"—that is to say, a man who would never be put off by any difficulty which he thought could be overcome. In this instance, too, his opinion as to the doubtful prospect of establishing any form of animal transport under European control is shared by the Acting Lieutenant-Governor. I am bound to say, nevertheless, that I should like to see another effort made to that end, though it must be for the Government and the Association to decide whether it is worth while for either of them to attempt it.

Apart from the above, there is the question of the breeding of the stock from which the Nigerian pack and draught animals are derived. This has been completely neglected by the natives, and could be greatly improved, I think, by a little skilled attention. At present the beasts are allowed to breed deeply in and in; the bulls and stallions are never cut and are constantly fighting with each other and worrying the cows and mares, and the result of this must naturally be to diminish stamina and fertility. The Nigerian cattle and donkeys are of an eminently useful stamp and would, I am sure, well repay more attention than they receive from their native owners. I should not be inclined, for the purpose I am now considering, to advocate the importation of pedigree stock. In the case of dairy or butcher cattle an infusion of short-horn or Hereford blood respectively will often work wonders, though at some risk, as far as my own experience goes,\* of creating susceptibility to special diseases. As regards working cattle it is far better to take the ordinary native stock and develop it by judicious selective breeding.

19. GRADING OF COTTON.—One of the worst faults in the present system of marketing Nigerian cotton seems to me to be the absence of any adequate safeguard against the passing of cotton which has been adulterated, and, worse still, the lumping together of all cotton, good, bad, and indifferent, and the fact that the worst class is paid for at precisely the same rate as the best.

With regard to adulteration, it is effected in various ways. The commonest, of course, is to mix with the cotton a few handfuls of pebbles, pieces of rock or of iron, etc. Many devices are more subtle. In some cases children are employed, two to each sack, one of whom waters the cotton as it is packed, while the other sprinkles it with sand. The effect of these occasional tricks, however, though very annoying, and productive of appreciable loss, is a mere trifle compared to the detriment which must accrue both to the British Cotton Growing Association, in a pecuniary sense, and to the reputation of Nigerian cotton generally, from the fact that there is no attempt

\* I bred cattle myself for many years on the other side of Africa on a small scale as a private hobby.

at grading, and that the Association is pledged to pay the full limit of its guaranteed price for all cotton, however inferior, as long as it is not absolutely unmerchantable.

To show what I mean I have sent to the Committee two samples of native cotton taken from a load of sacks which happened to be passing through the town of Ibadan when I was there. At the time when I stopped the lorry containing these sacks I had no idea at all what kind of cotton the sacks contained, nor did I pick or choose the samples in any way. They were just pulled indiscriminately from the two nearest bags. As the members of the Committee will see when they inspect these samples, they are little better than rubbish—stained, ragged, and full of grit and filth. The actual cotton itself is not so bad for indigenous produce, and if properly picked and packed would compare fairly well, I dare say, with average native stuff. But in this case it must have been left on the ground, exposed to rain and dirt for a considerable time. The cultivator probably was too lazy or too much occupied with other things to bother about it at the moment. Then some middleman came along, on his way to Ibadan, and offered a trifle for the crop, whereupon it was hastily gathered up with the mud and sand clinging to it, and was rammed into sacks and carried off to market.

Bad as it is, this sort of cotton is probably not classed as absolutely unmerchantable. The British Cotton Growing Association, in their anxiety not to discourage the native farmers, are very reluctant, I know, to turn any cotton away on that score, and I quite sympathize with their policy there. In my view the mischief, under the present arrangement, is not that low-grade cotton is accepted, but that it is paid for at precisely the same rate as the cleanest and finest lint that the country can produce. What incentive can there be to the native, under such a system, to devote any care or attention to his cotton? The incentive is all the other way. He knows that he will get the same price for it however good or however bad, as long as it does not sink below the very low level of the absolutely unmerchantable; and even if it does he will be able, as likely as not, to slip it through, just as he slips through adulterated stuff now and then.

Nor must it be supposed that the benefit of the full guaranteed price for inferior cotton is always or generally reaped by the actual cultivator. In the great majority of instances it is reaped by the middlemen. The poorer class of cotton is grown chiefly by natives in outlying districts who sow a few handfuls of seed among their ordinary food crops, without any intention of carrying the resultant produce to a distant market themselves, but in the expectation that some black trader will come along and give them a trifle for it on the spot. Accordingly, they take very little trouble about it,

regarding it as a mere side crop. Harvest time arrives, and the middleman perhaps is late on his rounds. Picking is postponed beyond the proper time; the cotton suffers accordingly, and, when at last gathered, is left lying about anyhow. Finally, the belated middleman, who has been purchasing similar stuff in other villages, turns up with his caravan and says: "Oh, this is very poor, dirty cotton of yours. I doubt whether the white men will buy it at all. However, if you like, I will give you a halfpenny a pound for it, on the off-chance." The cultivator agrees and the middleman takes the crop to market. Poor as it is he knows that it is just not bad enough to be rejected as unmerchantable, and that it will therefore fetch the full amount of the British Cotton Growing Association's guaranteed price, which has stood this season at 3½d. The result of this transaction is that the cultivator gets about what he expected to get, and is saved the trouble and expense of a long journey. The middleman also gets what he expected—a profit of 600 per cent., less cost of transport; the Association pays the piper, and a quantity of inferior cotton is added to the stocks already held in Lancashire there to wait for better times.

Now, frankly, I do not regard this as fair business, nor do I think that it is in the ultimate interests of the Nigerian cotton industry itself. I think that there ought to be some system of grading Nigerian cotton on the spot, however broadly, and that the flat rate now paid for all cotton indiscriminately should be so differentiated as to show some favour to produce which has been reasonably cared for, picked at the proper time, and cleanly handled, as compared with stuff which has been wilfully neglected. Beyond that I would not go. We must be scrupulously fair to the natives, and we have to remember that differences in the quality of native cotton do not always arise from greater or less care on the part of the cultivator. They may, and often do, result from conditions of soil and climate beyond his control. Thus, for example, Mr. Corden, manager of the British Cotton Growing Association's ginnery at Oshogbo, informs me that the cotton from Offa (a little way north of Oshogbo) has long been of distinctly better quality than anywhere else in the Oshogbo district, and has, in fact, averaged a penny a pound more on the home market. There is no question in a case like this of special attention, or neglect, on the part of the individual cultivator. The superiority of the Offa cotton is characteristic of that particular neighbourhood, and is an attribute of Offa cotton generally, so that we must assume it to be due to some peculiar virtue in the soil or climate of Offa.

Now I do not think that it would be either fair or expedient to discriminate in the prices paid for native cotton, on the ground of divergent quality, when such divergence is thus due to natural

factors and not to the cultivator's default. If we were dealing with the produce of European plantations it would be another matter, and we should then pay, of course, strictly according to quality, without reference to antecedent causes at all. But the native is only a cotton planter incidentally. He does not, and cannot, choose his little plot of land with an exclusive or even a primary view to its suitability for that crop. He can only sow his cotton seed where he happens to live, and if he takes anything like reasonable care of his crop I do not think he should receive less for it than his neighbours, whether its quality happens to be below the average or not. The only cotton which I should like to see actively discouraged is stuff which in effect has been adulterated, either directly by the wilful admixture of foreign matter, or indirectly by gross negligence—as, for example, where the bolls are left unpicked long beyond their time, to be beaten down by rain and splashed with mud and sand, or where the gathered cotton is thrown carelessly into some dirty corner, there to accumulate dust and grit and be trodden on by animals until some passing middleman offers a trifle for it.

The only way to stop that sort of thing is by grading at the markets. This is done in Nyasaland, and, I believe, in Uganda also, without any particular difficulty and at very small expense. The graders are natives, trained by the Agricultural Department, and do their work quite effectively. No elaborate system of grading is required. All I suggest is that wilfully neglected cotton barely above merchantable level should be classed by itself, and not be paid for, as it is in Nigeria now, on the same scale with honest lint. As long as it is, there will be an actual premium on such stuff, since cotton dirty weighs more than cotton clean.

While I am on this subject I may mention that one of the employees of the British Cotton Growing Association at Oshogbo (I regret that, for the moment, I cannot recall his name) suggested to me that the detection of adulterated and unmerchantable cotton would be much facilitated if the heavy, tightly fastened sacks in which seed-cotton is now brought in were replaced by some kind of wrapper which could be opened more easily. By way of demonstration a specimen of such a wrapper was improvised on the spot, and having been filled with cotton was opened in my presence in a few seconds, while at the same time the cotton itself was spread out to view by simply throwing back the folds of the wrapper on each side.

All matters like this, which relate to the general handling of cotton, are, of course, entirely for the British Cotton Growing Association to decide, but it is satisfactory to find the officials of the Association giving thought to the details of their work, and it seems worth while in this report to make a passing note of such suggestions.

20. COTTON IN THE RAILWAY BELT.—By the railway belt I mean here all land situated within such a distance of the Nigerian railways that produce grown on it can be delivered to the railway trucks within one day's journey on foot—that is, within, say, fifteen miles on each side of the line, from the southernmost limit of the cotton zone at or about Ibadan to the northern terminus at Kano, a total stretch of some 600 miles by 80.

In considering, as I have tried to do, from every possible angle, the supremely important problem of how to reduce auxiliary transport costs, a question which naturally suggests itself is whether we are already exploiting to its full capacity all such cotton soil as is included in the above belt—because, clearly, every acre of land within that belt is of quite peculiar value, in that whatever is grown on it can be loaded into the railway trucks without any trouble at all, and can be carried thence to the sea at a cost which, as compared with even the cheapest kind of auxiliary transport, is extremely small. Not only so, but all produce grown within that belt is freed also from the heavy exactions of middlemen, and can be sold by the native cultivator to the ultimate purchaser (the British Cotton Growing Association) direct, to say nothing of its immunity from wastage, and the fresher condition in which it can be delivered, as compared with merchandise which has to be traileed laboriously across perhaps fifty or sixty miles of intervening country.

Without prejudice, therefore, to the opening up of fresh cotton areas in outlying districts, which is a matter of great interest and importance (see paragraph 21, *infra*), we ought not to rest content until every bit of land in that immense stretch of railway belt—600 by 80 miles—which can be spared from food requirements, and which is suitable to the cultivation of cotton, is put under that crop. At present this is very far from being the case. There are large blocks of reputedly excellent cotton soil at numerous points on and near the railway—for example, between Kaduna, Zungeru, and Minna—which have hardly been touched. In some cases the reason alleged is scarcity of population. Where that is so we must try and get the Government to assist us in attracting settlers to such places. In other instances the shortage of agricultural officers has been cited. That, I hope, will soon be remedied by some such scheme as I have advocated earlier in this report. But in any event, and whatever the causes may be which have hitherto retarded the development of cotton areas in the railway belt, a determined effort should now be made to remove them.

21. PIONEER WORK IN OUTLYING REGIONS.—Though a good deal has been said and written in this connection and many interesting suggestions have been thrown out, no very clearly defined policy on the subject seems to exist at present. I will try, therefore—without

going into details at all—to sketch out briefly what appear to me to be the cardinal points by which such a policy should be guided.

The first of all prerequisites for expansion is, obviously, a suitable soil; but it is only one of several essentials. The richest soil in the world will not avail us, any more than Treasure Island would avail a castaway, unless there is labour to get the produce out of the earth and transport to carry it to market. Where the two first-named conditions are completely fulfilled—that is to say, where you have a fertile soil well adapted to the particular crop you want to grow, and where, at the same time, there is a sufficient resident population ready and willing to cultivate that crop—then Nature may be said to have done her part, and it simply remains to be considered whether the area is to be definitely opened up by providing it with the necessary transport facilities (that is the concern of the Government) and with the necessary markets (that is the business of the prospective purchasers of the crop—in this case the British Cotton Growing Association). The point I want to make now is that, before any steps are taken as to transport, or markets, or anything of that kind, it is absolutely essential to make sure that the natural conditions I have spoken of do, in fact, exist, and the only way in which that can be ascertained with reasonable certainty is by careful pioneer work extending over a sufficient period to justify the acceptance of its results as conclusive.

It may help to make my meaning clearer if I take a concrete example. There are several areas in Nigeria which would serve for this purpose, but I will select the region of South-Western Sokoto, already mentioned, which is in all respects typical. At present such evidence as we possess about the cotton possibilities of this area, though on the whole very favourable, is merely that of persons who have passed through it on their travels, or of Political Officers, who, though they may have spent a considerable time there and may know the neighbourhood well, in a general sense, are not trained agriculturists. This sort of testimony, though useful enough in its way, is clearly inconclusive. It is not sufficient to justify either the Government or the British Cotton Growing Association in embarking forthwith on any large outlay; but, at the same time, it constitutes a good *prima facie* case for investigation.

If I were dealing with such a case, then, I should send a cotton agriculturist (one of our new staff as soon as he had gained sufficient local experience) to some centre like Jega. I should try to get hold of a man who, besides possessing proper technical qualifications, was really keen on his job—not afraid of small hardships and discomforts, of which he would have his fill: the sort of man, I mean, who thinks of his duties first and is content to let rights and privileges take care of themselves. I should give him adequate funds, a

sufficient staff of native assistants, and a free hand. I should tell him to have a preliminary look round and then to establish pioneer plantations at as many promising points as he could effectively supervise (he would have to travel constantly for the purpose), and to test the resources of the district as thoroughly as possible. I should also tell him, emphatically, to do everything in his power, working always in conjunction with the local Political Officer, to get into touch with the natives, and to enlist their interest and goodwill.\* At the same time he would have to study the question of rival crops and any other purely agricultural factors bearing upon the interests of cotton, but with the executive or administrative aspects of the industry he would be told not to bother his head for a moment.

Having sent this officer out I should then, for the time being, dismiss his area from my mind, and turn a deaf ear to any propositions for actively exploiting it. At the end of a sufficient period, however, I should expect a full and clear answer from this officer to the question which he was appointed to determine, namely: "Is this area in which you have been working capable of producing on a large scale the class of cotton which Lancashire requires?"

If his reply was in the negative, I should not regard his efforts and his time as having been wasted. It would simply mean the definite elimination of an unsuitable region. But if his evidence were in the affirmative—if he were to report: "This area is excellently suited for cotton. The soil is right, the climate is right. I have got such and such results from my experimental plantations. The natives are interested and keen. I have distributed so much seed to them and they are asking for more. The Political Officer agrees with me that given suitable encouragement they would plant exportable cotton on a large scale," and so forth—then I should say to the British Cotton Growing Association: "Here is an area which has been systematically tested by a trained agriculturist over an extended period, and he reports most favourably on it. Are you prepared to open markets there if transport facilities are provided?"

Assuming an affirmative reply to that, I should then go to the Nigerian Government and say: "Will you provide these facilities? Will you consider, for instance, the question of building a railway from Jebba northwards? Or, if you cannot do that at present, will you help us, meanwhile, by improving the waterways of the middle

\* Sir Hugh Clifford has observed that European plantations, in themselves, are not of much use as object-lessons to natives, who will rarely take the trouble to visit them. That is perfectly true. The initial purpose of the pioneer plantations which I am speaking of would simply be to prove the capacity of the soil. But incidentally—by actual travelling among the natives and by getting into contact with their daily lives—the officer in charge of such plantations could, I believe, do a great deal to further the interests of the cotton industry.



Niger and its tributaries, dealing with the Bussa rapids, clearing the Argungu swamp, and so forth?"

Of course, the above is only the slightest and roughest outline of what I mean, but it may serve to indicate the main points which, as it seems to me, should be aimed at in the development of new areas, and the chronological sequence in which these points should be tackled. The gist of the whole thing is that, though there are a great many reputedly productive cotton tracts in outlying parts of Nigeria, these cannot be developed until they get markets, and markets will not come until there is transport, and transport will not come until there is something more to go upon than mere reputation.

I have said already that, pending the completion of the Eastern Railway, we can hardly expect the Nigerian Government to embark on further serious commitments in the matter of permanent transport. It is just the intervening years, therefore, which ought to be devoted to trained and systematic pioneering, so that, as soon as the Administration is free to consider fresh schemes of development we may be in a position to point to definite areas as being worthy of attention. I think this work ought to be taken in hand with as little delay as possible, for there is reason to believe that the cultivation of cotton in established centres such as Zaria is gradually approaching its practicable limits, having regard to the fact that it cannot in any case be pushed beyond the point where it would begin to interfere with the food-supply of the native populace. I dare say the yield of Zaria can and will be considerably increased yet before that point is reached, but in any event the output of a single province, even at its fullest, is but a very small matter from the point of view of home needs. If Nigeria is to do anything substantial towards helping Lancashire we shall require half a dozen Zarias, and the sooner we begin looking for them the better.

22. GUARANTEED PRICES.—The practice, adopted by the British Cotton Growing Association, of fixing a guaranteed price for raw cotton from year to year is a thoroughly wise policy, and has probably done more to encourage cultivation and stabilize the industry than almost anything else, the more so that it is an advantage not enjoyed, as far as I know, by any other crop. I think it essential, meanwhile, that this practice should be continued; that the price assured should be, in all cases, as liberal as circumstances admit; and that, where any doubt exists, its benefit should be given to the native vendor and its risk accepted by the European buyer.

At the same time, there are limits beyond which the extension of such guarantees would, in my opinion, be impracticable. It has been suggested, for instance, by some colonial Administrations (not, as far as I am aware, by the present Government of Nigeria) that

instead of a buying price being fixed from season to season it should be fixed for a term of years. Sir Frederick Lugard advocates this, and so does Sir Hesketh Bell. On the other hand, a contrary opinion is advanced by Mr. Goldsmith, formerly Lieutenant-Governor of the Northern Provinces, and by Mr. Lamb, Director of Agriculture.

Needless to say, I have the utmost respect for the experience and authority of Sir Frederick Lugard and Sir Hesketh Bell, and, indeed, I find myself in full agreement with most of the views expressed by these distinguished administrators in their evidence before the Committee. But in this particular instance I am bound to say that I do not share their conclusions. From the point of view of market prices cotton is notoriously one of the most uncertain and erratic of all crops—indeed, with the exception of wheat, there is perhaps no important agricultural commodity in the world whose market movements are so difficult to forecast. I do not see, in these circumstances, how any man or any association of men could be expected to quote a fixed buying price for cotton over a considerable series of years. That even the existing system of an annual guarantee may land shrewd and experienced purchasers in heavy loss is shown by the fact that the British Cotton Growing Association has actually been making such a loss this season and has been dropping money freely on every bale that has come into its ginneries. Under such a system, however, it is at least possible for the guarantor to put some limit to his risks. For a single season he can usually form some approximate estimate of the amount of crop on which the guaranteed price will have to be paid, and of what that crop is likely to fetch, when he gets it home, so that even in an unlucky year he will not actually have to face greater losses than he can meet. But in the case of a guarantee for a term of years there can be no such assurance. The interaction of the various factors which have to be reckoned with in fixing prices cannot be gauged so far in advance. The risks become altogether too wide, and the guarantor who should give such a pledge might well find himself involved, ultimately, in liabilities beyond his power to redeem.

It has been suggested, I observe, that this might be avoided by fixing the continuing guarantee at so low a figure as to make it virtually impossible for the guarantor to lose. Doubtless that might be done, but I hardly see what useful purpose it could serve. It would surely rather tend to depress than encourage the natives if we quoted to them the lowest price to which cotton might conceivably fall within the next four or five years. It would only be a minimum price, of course; but even assuming that no confusion arose on that point among the more ignorant natives, it seems to me that the public proclamation of such a rate would have rather a niggardly sound in the ears of the ordinary native peasants, and

would tend to associate in their minds two ideas which we want to keep apart—viz., the idea of cotton growing and the idea of a very poor return.

Then, again, I do not quite see on what grounds, in the case of an annual crop like cotton, a continuing guarantee is necessary. If some slow-maturing product were in question (rubber, coffee, tea, cocoa—anything which takes several years to come into bearing) the position would be different. We could not, in justice to the native, press him to undertake a venture of that sort, and to spend several seasons in tending his crop, without assuring him of a market when at last his labour should come to fruition. That, as I look at it, is the true function of an agricultural guarantee—to protect the native cultivator from being left with unsaleable produce on his hands, which he has grown at our request or by our advice. If so, then that function is completely fulfilled, in the case of cotton, by an annual guarantee. When the native puts his cotton seed into the ground he commits himself, not for a term of years, but for a single year. Mr. Goldsmith remarks in effect that he thinks it is unnecessary to guarantee the price of cotton for several seasons together since the native himself does not look beyond one season. With that I agree.

23. AGRICULTURAL SHOWS.—It has occurred to me that the institution of native agricultural shows, and the award of fairly substantial prizes for the best samples of cotton in different classes, might possibly have a good effect. A tobacco show was held at Ilorin some time ago, and there appears no reason why similar encouragement should not be extended to cotton. The Agricultural and Political Officers to whom I mentioned the idea seemed rather doubtful whether it would prove a success, and I do not feel at all certain on the point myself. As an experiment, however, it should be worth trying. There would be little difficulty or expense in arranging for such shows, and, if they should be instituted, the Empire Cotton Growing Committee would perhaps like to offer prizes for competition.

24. INSURANCE.—The suggestion was made to me before I came out to Nigeria that in view of the uncertainty attaching to the cultivation of cotton, its susceptibility to adverse climatic conditions, and so forth, it might be worth while to consider the possibility of some system of insurance designed to protect the cultivators from loss arising from such causes. After seeing the country, however, I am satisfied that no such arrangement would be practicable. The cultivation is too scattered and in too many hands to admit of adjudication on claims so arising.

25. CANTEN STORES.—As soon as African natives have made any money their first impulse is to spend it, and they keenly appreciate

any arrangement which will enable them to gratify this propensity on the spot. What they like is to find a well-supplied trading store of some kind immediately adjacent to the market where they sell their produce, so that they can kill two birds with one stone—dispose of their own merchandise, and then, immediately, buy what they require for themselves without making a separate journey for the purpose.

This demand is amply catered for in Nyasaland, and doubtless in Uganda also, by Indian merchants and pedlars, who set up their temporary booths, fully stocked with native trade goods, wherever a cotton market is established. In this way the natives, even in the remoter districts, are enabled to combine the selling of their raw cotton with the purchase of whatever they may fancy for themselves, while at the same time the rivalry of the Indian hawkers, the soliciting of custom by blowing of bugles and beating of drums, and so forth, invests the scene with an air of liveliness and animation which the natives thoroughly enjoy. In fact, the East African cotton markets partake very much of the nature of village fairs, and there can be no doubt that this has much enhanced their popularity.

In Nigeria, where there are no Indian traders, the same facilities do not exist, or at any rate not to anything like the same extent. In most outlying cotton areas there do not seem to be any trading stores, or, if native goods are stocked, they offer but a small range of choice and are carelessly and unattractively displayed. I should like to see more done to meet the convenience of the natives in this respect, and I am sure it would make them readier to bring their cotton to market and less inclined than they are at present to dispose of it to middlemen in their own villages. What is wanted are temporary stores, in ordinary grass huts, to be opened close to every cotton market for the duration of the buying season. They should be in charge of native agents, and should be plentifully supplied with a varied selection of such goods as are most in demand. I hold no brief for the Indian "banyan," who is in many respects a great nuisance in an African Protectorate; but there is no doubt that these men thoroughly understand their business, and any trader who wishes to captivate the fancy of native customers might well take a leaf out of their book. I am speaking now of a subject about which I cannot pretend to know much, but it seems to me that native Yoruba agents\* working on the above lines, under the general control of local European trading firms, might do a great deal to create and foster retail business in outlying cotton areas. Anything accomplished in that direction would be most helpful from every point of

\* I expressly suggest native agents, because, apart from the question of expense, European storekeepers, owing to racial and caste feeling, will rarely tackle work of this kind with the requisite degree of patience.

view. It would stimulate the desire of the native cultivator to make money; it would profit the companies concerned, benefit Nigerian revenues, and, above all, push the consumption of imported cotton goods, which must always be a matter of prime concern in connection with any scheme which seeks to establish a great export trade in raw cotton.\*

26. DISPOSITION OF GINNERIES.—As to this there are two alternatives—viz., to place the ginneries along the permanent transport routes (the waterways and railways) or to distribute them farther afield in the actual centres of cultivation: in other words, to bring the seed-cotton to the machines or take the machines to the seed-cotton.

The former is the policy of the British Cotton Growing Association, but the latter is not without some very weighty advantages. Indeed, on first consideration the balance of expediency would seem to be decidedly in favour of this latter system, because, since the process of ginning reduces the weight of any given quantity of cotton by at least 60 per cent., the resulting lint requires only a third, or less, of the transport which has to be employed for the carriage of seed-cotton. Moreover, if the ginneries are kept on the railway and cotton has to be brought to them from distant centres, the seed itself, or as much of it as is required for redistribution to the natives, must be carried all the way back again. Thus, assuming that it takes 1,200 pounds weight of seed-cotton to yield a 400-pound bale of lint (and in Nigeria it would take rather more than less), and supposing this cotton to be grown at a distance of fifty miles from the nearest railway ginnery, the result is that the whole of this 1,200 pounds must be carried fifty miles to start with, and then no less than 800 pounds of it (the seed) must be sent back again over the same fifty miles; whereas if the seed-cotton were ginned before being despatched to the railway it would only be necessary to carry 400 pounds (lint) for fifty miles. This means, in other words, that the same quantity of cotton requires *five times* as much transport under the former system as it requires under the latter; and, when we remember that the question of auxiliary transport is probably the most difficult and urgent of all the problems which confront us in Nigeria, the expediency of ginning the crop as near as possible to the places where it is grown becomes very strikingly apparent.

In itself this presents no particular difficulty. Small ginneries could be erected easily enough, I take it, wherever required. The point is that lint intended for export has to be pressed into bales of a standard weight of 400 pounds by powerful hydraulic machinery.

\* Because the more such goods are used, the less raw cotton will be consumed in local manufactures. This question is dealt with separately later on. (See paragraph 30, *infra*.)

It would be quite impracticable, evidently, to attach such expensive and immensely heavy presses to every small ginnery, and, even if it were not, there would be the utmost difficulty in transporting lint from outlying centres to the railway in bales of 400 pounds. Pack donkeys, which carry the bulk of the northern crop, could not, of course, deal with anything like such weights; still less could native porters. It follows, then, that lint from outlying ginneries would have to be brought to the central presses in lightly packed loads, and there rebaled to the standard weight. I should have thought that any disadvantages attaching to this would be less than are involved in taking cotton to the railway before ginning it at all. The thing, however, has been tried, and the results apparently show that the transport of lint across country in loosely pressed bags is a most unsatisfactory system; that the double handling and rebaling entail a greatly increased expenditure; and that the lint itself is liable to be stained and damaged in transit to a very serious extent. This is expressly stated by various authorities, including Mr. Penzer (Intelligence Department of the Federation of British Industries), and is corroborated by the staff of the British Cotton Growing Association, whose actual business it is to purchase and export cotton, and who have tried both systems on the spot.

Great weight, naturally, attaches to the findings of such men on a point like this, and my own competence to deal with it is, relatively, so limited that I can hardly do more, meanwhile, than present the main facts and arguments on both sides, leaving further discussion on the subject until I have an opportunity of meeting the Committee personally.

27. TENURE OF LAND.—A distinguishing feature of the Nigerian system of land tenure is the absence of the large European freehold estates which are more or less characteristic of the East African group of Protectorates. As a consequence of this, exportable crops in most of the East African dependencies are grown chiefly or entirely by white landowners with hired labour.\* On the other hand, the native inhabitants of Nigeria are independent cultivators, and take both the profits and the risks which such independence involves. They grow their ground-nuts, their cocoa, cotton, or whatever it may be, for themselves, and not for a fixed wage, and they dispose of their crops as they choose, to the best advantage they can.

Sir Hugh Clifford gave me to understand that he was strongly in favour of the latter system and regarded it as greatly preferable to the other; a view with which, as far as Nigeria is concerned, I

\* An exception must be made as regards cotton in Uganda. In Nyasaland, also, attempts have been made with some success, of late years, to establish cotton as a native crop, though the bulk of Nyasaland cotton is still grown on European plantations.

entirely agree. Probably the divergent lines on which agricultural enterprise has thus proceeded, in East and West Africa respectively, were originally shaped less by any preconceived policy than by natural conditions. The East African Protectorates are, on the whole, much better suited to European settlement than those on the west, while at the same time their native peoples are generally less advanced and in particular have much less commercial aptitude, so that the intervention of white settlers on that part of the continent was more or less necessary to the opening up of its resources.

However that may be, it is clear, of course, that where European vested interests have once come into being, as is the case on the eastern side, they must be respected, and that the development of the country must follow the lines which their existence involves. But the difficulties arising out of such a situation are great and inevitable. After a very long and close experience of such conditions I should say that more than 50 per cent. of the problems with which our various East African Governments have to deal—and those among the most intricate and perplexing—take their origin, directly or indirectly, in the relations between the white settlers as landlords and employers and the native inhabitants as tenants and labourers. I do not mean that the latter are unfairly treated. European planters and estate-owners in Africa are neither more nor less humane and fair-minded, in my experience, than any other class of men. Moreover, it is not in their interests to treat their workmen badly, and any who did so would very soon lose their labour-supply altogether. What I mean is that with the best will in the world on both sides the freehold plantation system seems to breed a never-ending crop of legislative and administrative problems. Scarcely a year passes in which fresh Ordinances or amendments to existing Ordinances on the subject are not added to the Statute-Books of the countries where the plantation system is in force, and of all measures which pass through their Legislatures these are invariably the most contentious and the most difficult to frame with equal justice to the different interests which they affect. That, however, is merely the political side of the question. What is more pertinent, from our present point of view, is that wherever the system of independent native cultivation is practicable (as it is in Nigeria) and wherever it is adequately guided, instructed, and encouraged, it will effect more in the long run—it will open up a country more widely, thoroughly, and economically—than would be possible in any other way. Of that I am certain, and one has only to look a very little below the surface of things to see why it must be so.

In the first place, European settlement is never so diffused as native settlement. It tends to concentrate in a few favoured districts. Of course, there are always a certain number of pioneers

who prefer to push on into outlying regions, but that the general tendency is as I have said can be seen by a glance at the estates map of any tropical dependency where European colonization is in process. That is quite natural and intelligible, because the white man's needs are incomparably more varied and exacting than the black man's, and he is therefore more dependent on civilized, or quasi-civilized, conditions. He prefers to live, as a rule, where modern facilities are not altogether out of reach; where social amenities are more or less available; where he can get his mails and supplies regularly; and where he can keep his wife in some kind of comfort. The result, however, towards which this habit of concentration inevitably tends is to oversettle a part of the country—often quite a small part—to inflate the price of land there, and to exhaust the local labour-supply, while all the time millions of fertile acres are lying undeveloped a few days' march away.

We have to remember, also, that between the work which a man does for a fixed wage and what he undertakes on his own account there is generally a marked difference in quality, and this is particularly true of Africans, whose hired labour, no matter what their wages may be, will always be found very expensive in practice because so careless and perfunctory. The negro plantation hand takes, in fact, no sort of interest in his job. Its profits do not concern him, neither do its risks. He gets practically the same remuneration, whatever crop he is engaged on, and he gets it equally whether the harvest is a success or a failure. The independent native farmer, on the other hand, stands on a much higher industrial plane. His personal interests throughout are closely identified with his work, and the extent to which he has to use his own judgment tends to develop in him just those qualities which we want to see in native cultivators.

Another weak point in the European plantation system, as Sir Hugh Clifford has observed, is that it almost always necessitates the employment of immigrant labour in some form or other. It is true that in East Africa—at any rate in Nyasaland—there is not at present any importation of labour from outside countries, but there is (what comes to much the same thing) a perpetual struggle among planters in the agriculturally congested districts to supplement the insufficient labour-supply resident on their own estates by recruiting natives from the remoter parts of the Protectorate. This system has never been satisfactory either to employers or employed, and never will be. The up-country natives for the most part are reluctant to leave their homes. Only a limited number can be induced to engage, and these do their work carelessly and indifferently, always thinking of the time when they will be able to return to their villages. The supply of such labour is so



irregular that the European planter who depends on it never knows beforehand how many men he will get, and cannot therefore make his plans for each ensuing season with any certainty. Meanwhile, he has to meet all sorts of special costs. He must employ an experienced recruiter for perhaps two or three months. He will be lucky even then if he gets 50 per cent. of the men he needs, and towards these he is under special statutory obligations in the matter of housing, food, medical attendance, and so forth, all of which add considerably to his expenses.

I should be the very last to minimize the debt which tropical agriculture owes to our white planters and settlers in the East African group of Protectorates, or to underrate the pluck and energy they have shown or the value of what they have accomplished. But it is not, in truth, possible for a comparative handful of Europeans, dependent on hired labour, and hampered by the limitations which in such countries affect all white men more or less, to develop the almost boundless resources of tropical Africa as quickly, fully, and cheaply as can be done by enlisting the activities of the entire native community on a basis of independent cultivation. The history of cotton growing in Africa illustrates this with peculiar clearness, for it is precisely in those countries where such independent cultivation is in force that the cotton industry, beyond all comparison, has been most successfully developed.

28. MIDDLEMEN.—The future of Nigerian cotton is, of course, very largely a question of prices—a question of how far it can be made a profitable crop for the natives to grow. But all-important as that aspect is to the cultivator, it is not quite the only aspect. There are other considerations which he takes into account more or less, and prominent among these is facility of marketing. That ordinary African peasant farmers should be reluctant, as a rule, to travel far from their homes is not surprising when one considers their habits and the conditions under which they live, the imperative necessity of looking after their food crops, their doubts as to how their womenfolk might behave in their absence, and the hesitation which most of them feel at the idea of going to any considerable distance from the places in which they have been bred, and adventuring, perhaps, into some province not under the jurisdiction of their own Resident or their own Emir. In consequence, only a minority of cultivators actually bring their cotton on their own heads to the railway ginneries, where alone they can obtain the full guaranteed price for it. Most of them prefer to effect a sale to middlemen at some intermediate stage—either on their own farms, or at one of the outlying markets which have been established in all the chief cotton growing districts.

Official feeling among Political Officers and others appears to be

decidedly against the middlemen, and I cordially sympathize with the sentiment in which it is founded—namely, a desire to cut out profiteering and to let the cultivator get the full benefit of what his cotton is worth. But the whole question, like many others which appear, on the surface, to admit of only one point of view, is in reality much more complicated than might be supposed. I studied it with some care during my travels in Nigeria, and the conclusion at which I have arrived is that, under existing circumstances, there is really a good deal to be said for the middlemen. I do not mean for their characters. In that respect they are neither better nor worse than other native traders, which is as much as to say that they will take any advantage they can get, fair or otherwise. At the same time the middleman is so far from being useless (as I have occasionally heard him described) that, but for his active intervention, a very large proportion of the cotton now exported from Nigeria would not only never come to the ginneries—it *would never be grown*.

It is naturally to the interest of these traders that the crops in which they deal should be cultivated as widely as possible, and therefore they exert themselves to push such cultivation in every way they can, acting in effect as unpaid, but most energetic, agricultural propagandists. Such is their enterprise that they will often hire motor-lorries at their own expense to convey cotton seed to localities in which they are particularly interested, and what is more, they see to it that the natives plant and tend this seed.\* Nor do the middleman's activities stop there. Where he "comes in," with peculiar effect, is that he arranges for the transport of produce from innumerable outlying centres whence, but for his intervention, there would be no means of getting it in. In the north he does this by means of the pack animals which he owns or hires. In the south he still does it to a considerable extent by means of human portage, and this illustrates strikingly the extent of his influence over the village natives, for, as I have explained already, Europeans now find it almost impossible to procure carriers at all in many of the southern districts. Yet the middleman generally contrives to get them, somehow or other, and that, too, at a wage which enables him to sell his merchandise at a handsome profit. He does it, of course, by means which would be impracticable for Europeans—by moving about constantly among the people, persuading, cajoling, and, I dare say, bullying them; getting one gang to carry his loads to a village ten or twelve miles away and picking up a fresh lot there to go on to the next. I am afraid he is a bit of a usurer, too, and has,

\* Needless to say, the middleman's affection for any particular crop only lasts as long as it is a profitable subject for his dealings. Cotton has been particularly so this year, owing to its high guaranteed price and the "slump" in almost all other kinds of local produce.

in that way, a certain hold over the more timid and ignorant; but he is not above doing them various small services too, such as writing their letters for them, and is generally a person of free-and-easy manners, with none of that affectation of superiority which makes the educated native clerk so intensely disliked. I often asked villagers in the remote districts what they thought of middlemen, and even when blaming them for their greediness, as they often did, they generally laughed, as much as to say, "These fellows are rogues, but they are not without their redeeming qualities."

All my sympathies are with the village cultivator, and nobody would be better pleased than I to see the middleman cut out, and the full value of the peasant's crop put into his own hands. But it is clearly impossible for this to be done as long as the native farmer, in outlying areas, is unable or unwilling to carry his produce to the railway stations, where alone the maximum guarantee is payable. Until, therefore, railways become sufficiently extended to bring these outlying districts into direct touch with the ginneries of the British Cotton Growing Association some connecting-link between the Association and the native cultivator is indispensable, and the middleman supplies that link. As things are, I do not see how we could eliminate him without bringing a great part of the Nigerian cotton industry to a standstill.

29. THE RIVALS OF COTTON.—A good deal of stress has been laid now and then on the assumption that there are numerous exportable crops in Nigeria which compete, or are capable of competing, with cotton, and that the native cultivator is in a peculiarly independent position because he can turn his attention to whichever of these crops happens to be most profitable to him on the basis of current prices from time to time.

Personally, I cannot help thinking that the extent to which this may be so is less than has been suggested. Thus, let us take the chief rivals, or reputed rivals, of cotton seriatim and examine their position. The most important among them probably is the oil palm. But the palm belt and the cotton belt are not by any means coincident areas. They impinge on each other to a certain extent no doubt—that is to say, the northern fringes of the palm region and the southern fringes of the cotton region overlap a little here and there. But the great bulk of palm oil and kernels comes from the deltaic and coastal districts where cotton will not thrive, and the great bulk of cotton lint comes from the drier northern tracts where the oil palm is not found. Nearly the same is true of cocoa. The area common to it and cotton may perhaps be slightly wider, but in any case this common zone is only a very small fraction of the vast regions in which the two crops grow separately and without mutual interference.

Ground-nuts, on the other hand, do undoubtedly share a very large extent of country with cotton in a certain sense. By that I mean that there are several great provinces in the north which freely produce both ground-nuts and cotton. But I am informed by those who are in a better position to advise on such a point than myself that the actual soil requirements of these crops are by no means identical—in other words, that though you may see both nuts and cotton growing abundantly in the same province or district, you will not see them growing in the same kind of soil.

If the above premises are correct, then we should expect to find the output of Nigerian cotton practically unaffected by a "boom" in either palm oil, kernels, cocoa, or ground-nuts, and, significantly enough, *that is just what we do find*. If my readers will refer for a moment to the trade lists published in the "Nigerian Handbook" they will see that, broadly speaking, the exports from Nigeria of oil-bearing produce and of cocoa reached their zenith during the years 1919-1920 on the extraordinary wave of high prices which followed the close of the war. If these crops were rivals of cotton in any real sense of the word, then the great increase in their output during those years should have caused a corresponding diminution in the output of exportable cotton. As a matter of fact, it did nothing of the kind. The Nigerian cotton exports for those two years were the greatest ever recorded—not in value merely, but in actual weight.

As far as I am in a position to judge, therefore (and I speak on this subject not with any pretence to expert knowledge, but merely as one who has observed what he can and has tried to put two and two together), all the facts seem to point to its being possible to cultivate cotton in Nigeria, on a large scale, without any pronounced economic struggle between this crop and the other chief products of the Colony and Protectorate. I sincerely hope that will prove to be the case; but it is important to remember that, in one sense, there will always be a possibility of serious competition between cotton and other crops, and not only other crops but all other articles of export. I refer to competition for transport. In this sense the recent abnormal activity in vegetable oils and cocoa, as well as in animal products such as hides, and mineral products such as tin, did very gravely threaten cotton, for the flood of this rival produce was so great, the profits to be made on it were so high, and the eagerness of local traders to reap those profits speedily was so insistent, that the railways, handicapped by the depletion of their rolling-stock during the war, could barely cope with the rush of freight, while at the same time animal transport and human portage were practically cornered, and cotton for the time being was almost shouldered aside.

There is, however, little probability that such a situation will arise again. The replenishment of worn-out railway stock and material and the provision of a second outlet through the new Eastern line will soon place the Nigerian Government in a position to deal effectively with any increase of traffic which is likely to occur for a long time ahead. Nor do I anticipate that trade revival, though it is bound to come in due course, will take the sensational shape of another "boom."

30. NATIVE COTTON MANUFACTURES.—From the standpoint of the interests with which the Empire Cotton Growing Committee is concerned, the existence in Nigeria of an indigenous spinning and weaving industry is a factor which, as I think, cuts to some extent both ways. Much has been said as to the obstacle which this industry places in the way of attempts to create a great export trade in raw Nigerian cotton, and that certainly is an aspect of the matter which we cannot afford to overlook for a moment. But, on the other hand, it must be admitted that the fact of cotton having been established as a familiar crop among the local tribes for centuries, both on an agricultural and a manufacturing basis, does at any rate relieve us of the very serious difficulties commonly attendant on any effort to induce African natives to take up a cultivation to which they are not accustomed.

Thus, for example, I have still a vivid recollection of the almost endless trouble which we had to face during the years when we were trying to establish cotton as a native industry in Nyasaland. The people of that country, at the time, neither understood nor cared anything about cotton. It was something entirely new to them. If it had been a food crop or anything which they could use among themselves, the position might have been different. But they could not eat cotton; they did not know how to spin or weave it; they were not interested in it at all.

It is true that the difficulties engendered by this attitude have been surmounted more or less by now; but the point I wish to make is that the foundations which it took us fifteen years to lay on the other side of Africa are ready to our hand in Nigeria, and were ready long before we ever came to the country. Go where you will over the greater part of Nigeria, even in districts where there are no regular markets or transport facilities, and where, consequently, cotton is not yet grown for export, you will find that it has been in use for local purposes so long as to be practically a household word. This evidently saves us an infinity of trouble in one sense. It spares us the necessity of combating all that apathy and indifference to the crop which have had to be overcome in other circumstances, and to that extent at any rate we may give credit to the indigenous manufacturing industry, to feed which the

cultivation of native cotton in Nigeria was originally undertaken.

Turning now, however, to the other side of the question, it is evident that the fact of the Nigerian people being cotton manufacturers themselves creates a local demand for raw material which must tend to diminish the amount available for export. How far it may actually have this effect is mainly a question of prices, including both the price obtainable for raw cotton on the one hand, and the price charged for manufactured cloth on the other. As long as it pays the natives best to send their cotton overseas they will dispose of it accordingly; and so again, if imported Manchester goods of reasonable quality can be made cheap enough to suit their pockets, they will buy these goods rather than manufacture their own stuff. Otherwise their raw cotton will go to the local spinners and weavers, or as much of it as can be utilized in that way.

That is the position in a nutshell, and I do not see how any action which the Committee or the British Cotton Growing Association could take themselves, or suggest to the Government, would alter it in any sensible degree. At the same time my personal opinion—though I give it with the diffidence proper to one whose practical acquaintance with Nigeria is so limited as mine—is that the tide has begun to set slowly but definitely in favour of the export trade and against the indigenous textile industry, and that, allowing for occasional fluctuations and interruptions due to abnormal price movements, it will continue in that direction.

It is impossible to ascertain with precision either the total amount of raw cotton produced in Nigeria or the proportion locally consumed. I have heard the former estimated at all sorts of figures, up to 150,000 bales, and the latter at anything from 50 to 90 per cent. Such calculations are little better than guess-work, and therefore do not help us much; but if we bear in mind the very large and rapidly increasing extent to which manufactured cotton goods are now being imported into Nigeria,\* and if we remember that the indigenous cloth, though excellent in quality, can only be manufactured by a slow and laborious process, and that it is of a peculiar weight and texture, standing in much the same relation to Manchester goods as Harris or Donegal homespuns stand towards ordinary

\* The value of cotton fabrics imported during the last two years for which statistics are available (1919-1920) amounted to no less than £9,364,513. This actually exceeds the total value of all cotton goods imported during the five preceding years put together, and (excluding Government property and specie) represents more than half the entire import trade of Nigeria.

The quantity of cotton imports, in terms of weight or measurement, is not stated in the "Nigerian Handbook," from which the above information is derived; but even making allowance for the fact that nominal values, depending as they do on price movements, are not always a true index to the actual volume of trade material, the figures quoted are very significant.

woolstuffs, then it seems at least open to question whether local manufacturers really absorb as much raw material nowadays as is often suggested.

As far as my own observations go I should say that the natives now generally wear imported cloth wherever they can get it easily. Little native stuff comparatively is to be seen in and about the chief townships on the railway, especially in the south. In remoter districts, on the other hand, the position is reversed, and local cloth is markedly predominant, but I think the reason of this is simply that in such districts imported fabrics are, in fact, almost unprocurable. The only opportunity which the inhabitants have of buying British manufactured goods in such places is when some travelling hawker happens to pass through their villages, and even then the price of Manchester wares, owing to the extra transport costs which the hawker has to meet, is comparatively so high that the rank and file of the villagers prefer to wear their own cloth, and to spend such money as they can spare on articles which they cannot manufacture for themselves. On the other hand, the more well-to-do natives, as far as I have been able to observe, usually wear imported cloth, even in such distant parts of the country as, for instance, Northern Kontagora and Sokoto, where all the Emirs and Headmen received me wearing draperies of British manufacture.

At Kano, which is the chief northern centre of the native textile industry, I asked the Emir how this industry was doing, and received the answer that it was still active, but dwindling. I believe this reply was quite genuine, for I had previously asked the Political Officer who kindly acted as my interpreter to frame his questions in such a way as to avoid giving the Emir any lead. I may mention here that I noticed many cases at Kano in which imported and local goods had been combined by adding native embroidery to Lancashire cloth. This embroidery is quite an industry in itself, and I saw numerous stalls in the Kano market piled with English cotton goods which had been treated in this way.

In the south I found the general preponderance of opinion to be, as in the north, that the native textile industry, though still flourishing, is beginning gradually to decline. Thus, for example, the official gazetteer of the province of Ilorin, which has long been a prominent centre of indigenous cotton manufactures, states that these are now tending to decay, "owing to the competition of Manchester goods."\*

I should like to suggest at this point that—while I recognize the impossibility of determining in any precise manner the amount of raw cotton locally consumed—it should be possible to arrive at

\* It is curious to note that one purpose for which locally woven cloth is still exclusively used in Ilorin is to shroud the bodies of the native dead.

some approximate estimate of the activity of the local textile industry, from time to time, through the returns compiled by, or at the instance of, the Political Officers, which register the occupations of all natives residing within the various taxable areas under their jurisdiction. This would only be practicable, of course, in those parts of Nigeria where direct taxation is in force; but since these include nearly all the principal cotton growing provinces except Oyo, it should be a fairly simple matter to ascertain the actual number of native spinners and weavers in each, and the proportion in which they stand to the total population.

The Acting Resident of Ilorin (the Hon. H. B. Hermon-Hodge), to whom I suggested this, was kind enough to obtain the necessary statistics for me as regards the province of Ilorin, except the town of Lokoja, for which the annual returns had not then been received. The figures thus furnished are as follows:

Spinners in the province of Ilorin	Male	-	31	}	6,907
	Female	-	6,876		
Weavers in the province of Ilorin	Male	-	1,586	}	64,401
	Female	-	62,815		
Total				-	71,308

The total native population of Ilorin is 527,982, from which it would appear that about 1 inhabitant in every 76 is a spinner, and 1 in every 8 or 9 a weaver.\* This, however, must not be taken to mean that all these persons are regularly and permanently engaged in spinning and weaving, but simply that they are persons who understand those crafts and practise them as occasion offers. If the Committee so desires, I have no doubt that the Nigerian Government would be kind enough to furnish similar statistics for the remaining Nigerian cotton provinces, and since these statistics are periodically revised in connection with successive tax assessments, their gradual increase or decline should afford a valuable index to the general condition of the native textile industry from time to time.

My own impression, I may say finally, is that, although this indigenous manufacture is still vigorous and important throughout Nigeria and may well remain so for many years to come, it is beginning to show signs of incipient decay, and that its decline will assume

\* Through the kindness of Captain W. Ross, Senior Resident of the neighbouring province of Oyo, I was enabled to see male and female weavers at work in a village near Isseyin. They construct quite differently shaped webs, the men's being much narrower than the women's. This difference is everywhere constant—that is to say, a male weaver *never* makes a broad web or a female weaver a narrow one. I asked whether the cloth so manufactured was used for male and female garments respectively, but was told that there was no restriction in that respect. A man might wear cloth woven by a woman, or *vice versa*. Why the two sexes should construct webs of a different shape the natives could not say.



more marked proportions as soon as the industrial dislocation created by the late war becomes so permanently adjusted as to enable Lancashire cloth of tolerably good quality to be imported into Nigeria at consistently moderate prices.

I do not mean to imply by this that I regard the native textile industry as in any sense moribund at present, or that it is not a factor to be most seriously reckoned with in connection with the export of raw cotton. My view is emphatically the opposite. There is abundant life in the industry yet; its output is still very large; its craftsmen are numbered by hundreds of thousands, and it only needs a sudden sharp rise in the price of imported goods to galvanize it into increased activity at any moment. But, assuming the eventual resumption and continuance of approximately normal trade conditions, and immunity from those violent fluctuations which have had such an unsettling effect of late years, I do not think there can be any question as to the eventual fate of local textile manufactures. All the world over peasant industries, in the end, have gone to the wall before the competition of modern methods. I do not believe that this particular industry, which is essentially a peasant avocation, will prove ultimately to be any exception to that rule, and I expect myself that the next generation will find it practically obsolete, or only surviving here and there as a curiosity under the patronage of individuals, much as certain kinds of old English lace and Celtic homespuns survive in the United Kingdom to-day.

I must confess to entertaining a decided affection myself for these immemorial folk industries, and if it were possible to preserve this ancient native craft without prejudice to interests of greater practical moment, I should be the last to contemplate its extinction with complacency. But I am dealing now with a purely business proposition, and I can only approach it from a business standpoint.

81. REPOPULATION OF AREAS DEVASTATED BY THE SLAVE TRADE.—In his report on the amalgamation of Northern and Southern Nigeria, Sir Frederick Lugard remarks, with reference to the cotton resources of the country:

“It is of no use describing ideal tracts of waste land in Kontagora and elsewhere where the population only averages four to the square mile.”\*

One naturally wonders, on reading this passage, why these “ideal” areas should be so thinly settled in a country which has to support such a comparatively large population as Nigeria. The explanation—in the case of Kontagora at any rate—is to be found in the operations of the slave trade. It may appear strange that after some fifteen years or more of peace and settled conditions

\* It is now six to the square mile in Kontagora.

under British rule the effects of this devastation should still be so apparent, but I have noticed much the same thing in other parts of Africa which have suffered in a similar way.

During my recent tour I travelled from end to end of Kontagora, and my observations quite agree with those of Sir Frederick Lugard, both as to the fertility of some parts of this province and as to the thinness of its population. That it is capable of supporting, and must in fact have supported at one time, a much larger community than it does to-day is evident from the traces of former close settlement still noticeable in many parts of it. Over extensive tracts, where few or no natives seem to be living now, one still meets on all sides with the unmistakable marks of old cultivation.\* Still more significant are the numerous ruined and abandoned villages through which the traveller passes in this province. Some of those I saw must have covered a very large area, judging from the remains of their outer walls, often 12 or 15 feet thick at the base, which for the most part are all that now remain to mark the sites of what were once populous and flourishing settlements.

In this connection it seems worth while to consider whether such areas could not now be repopulated gradually, by encouraging immigration from more closely settled districts. I have had some experience of such measures on the other side of Africa, where I found that, although the natives might be slow to move at first, they would generally do so pretty readily as soon as a certain number had been induced to show the way. The question, however, presents certain difficulties in Nigeria owing to the comparatively advanced system of native administration which obtains there and the susceptibilities of the Emirs who would naturally be disinclined to lose any appreciable part of the subject population on which their own importance depends.

Having regard, however, to the intimate connection which exists between agricultural development and the distribution of the native populace, I suggest that it would be of much interest to obtain the views of Sir Hugh Clifford as to the possibility of gradually re-settling such areas without prejudice to political or other interests.

\* The deeply trenched furrows and high ridges of native tillage last a long time, and even when much worn down and overgrown are easily distinguishable.

## PART III

### MISCELLANEOUS

1. **THE WORK OF THE BRITISH COTTON GROWING ASSOCIATION.**—Mr. A. H. Kirby, Acting Director of Agriculture for the Southern Provinces, observes in his official report for the half-year ended December 31st ult. that on the Association's guaranteed buying price the native cotton cultivators were actually being paid for their lint at a rate equivalent to 1s. 2d. per pound at a time when its market value was no more than 6½d. at the port of shipment; and he goes on to say that this "helps to demonstrate the extent to which the cotton industry of these provinces is being encouraged at the expense of the Association."

That was last season (1920). If we look at the results of the current year (1921) we shall see that the sacrifices of the Association have been persistently continued, and that, in order to establish and popularize the industry, it has not hesitated to purchase the largest crop ever grown in Nigeria at prices far beyond anything which can be realized for it.

I hold no brief for the British Cotton Growing Association, but credit should be given where credit is due, and I do not feel that this report would be complete without some acknowledgment of the self-denying work which the Association has been doing in Nigeria. This present year has been, so far, a dark one for the trade of the Protectorate and Colony. The hopes that were built on the abnormal exports of the preceding seasons in palm oil, kernels, cocoa, ground-nuts, hides, and tin have not been realized. Amidst universal depression one local product alone has markedly improved its position, and that is cotton. But it has done so chiefly because it has been championed by the Association—because it has had behind it the guarantee of a body which has shown itself ready to accept loss after loss in order to tide cotton over the difficulties which have lately beset every local industry. And we must remember that these losses to the Association have been the gain of almost everyone else who has touched Nigerian cotton in any capacity. The native peasant farmers have reaped an enormous sum from their lint in this trying and discouraging year when they could sell little else. The Yoruba and Hausa middlemen have practically lived on the industry. The European trading firms who could do but scanty business in other produce have made a heavier commission on cotton than ever before. All these gains have come out of the pocket of

the Association. All these people have made their profits out of its guarantee. Nor must we forget what Nigerian cotton has meant this year to the common carriers by land and sea who have looked to it for their freights. Before I left England the Directors of Messrs. Elder, Dempster, and Company at Liverpool told me that in view of the widespread depression in West African trade they might be compelled to withdraw some of their cargo steamers from that coast unless cotton came to the rescue—as it has. The principal agent of the Company at Lagos states: “I simply do not know what we should have done this year if it had not been for cotton.”

I am touching on all this because, with the formation of the Empire Cotton Growing Corporation and the great movement which it is setting on foot to establish the cultivation of British cotton on a scale commensurate with this country's needs, the time has come when large appeals will have to be made to the Governments of all British cotton growing dependencies. I do not mean merely as regards expenditure. Some of the most welcome and effective forms which Government assistance can take are not cognizable in terms of money. I should be the last to say—and indeed it would be quite untrue to say—that cotton has not been treated fairly by the Nigerian Government. It has been helped incidentally in many ways; notably by special freights on the railway, and as regards motor transport. But until very recently—in fact, until the present year—Nigerian cotton has been overshadowed by so many other local products, that, in the eyes of anyone judging it simply by its relative position on the export list, it may well have appeared to be an industry of secondary importance, and I think there has been, perhaps, some tendency to regard it in that light. The current year has, however, witnessed an unprecedented expansion in the output of exportable lint both from the Northern and Southern Provinces. I foresee various difficulties for the industry still, yet there was never a time when its prospects on the whole have been brighter. There was never a time, certainly, when the natives have been keener to plant cotton or when the claims of the industry to official recognition and support have been more cogent, for it has gone far to save the Nigerian trade situation in 1921, as I think everybody admits. But it has done so at such a cost to the Association as very few people realize. While others have freely reaped the profits of the Nigerian cotton industry, all its losses have been borne by the Association, whose pledge to the natives has been kept through thick and thin, without a moment's question or demur, to its own heavy impoverishment, and, as I think, greatly to its honour.\*

\* The Secretary of State for the Colonies in a recent speech laid just emphasis on the effect likely to be produced on the native mind by such typical instances of British good faith; and their value in that sense is, indeed, incalculable.

I may say here that I did not come across the Association in Nigeria for the first time. I had frequent dealings with it when I was helping to administer the Government of Nyasaland, and I know its record, therefore, pretty well. I have not always seen eye to eye with the Association in the details of its policy, but it has never failed to take a broad view of its responsibilities and has consistently maintained the highest standard of straightforwardness in its transactions. Mr. J. Arthur Hutton, its Chairman, in a paper read at the Imperial Institute in 1914, said:

“We never urge the Government to take any particular step, whether it be the building of a railway or the guaranteeing of a colonial loan, *unless we are convinced that what we urge is in the interests of the Empire.*”

That I fully believe, and I hope that in the work which lies before it in Nigeria the Association will receive every encouragement which Sir Hugh Clifford's Administration and the Empire Cotton Growing Corporation can give it.

2. IMPERIAL ASPECTS OF THE COTTON INDUSTRY.—Although I have nothing but praise for the attitude of the great majority of Political Officers towards the cotton industry, and for all they have done and are doing to help it, I am bound to say that very few of them seemed to me to realize at all clearly either the vast importance of the industry from an Imperial point of view, its typically British character, or the imminence and gravity of the dangers which threaten it.

I do not mean this to be construed too sweepingly, of course. There are several officers in the higher grades of the service—men, for example, like Captain W. Ross, Senior Resident of Oyo, and Mr. H. R. Palmer, Senior Resident of Bornu—who have a perfectly sound working knowledge of the subject and take an extremely keen and intelligent interest in it. But among the junior officers, though I met with nothing but good-will, I could not help noticing a general lack of information regarding those broad fundamental points on which the whole case for cotton rests, and without a clear understanding of which the true significance of the industry to the nation cannot be appreciated.

In the course of my conversations with these officers I often asked, for example, what place in the scale of relative importance they would assign to cotton as compared with other British industries such as iron, steel, wool, agriculture, shipbuilding, and so forth; whether they had any idea, however rough, of the number of persons in the United Kingdom who rely on the cotton industry for their subsistence; and whether they could say at all for what proportion of the raw material of this characteristically British institution we are now dependent on foreign supplies.

I was, of course, careful to explain that these questions were not put with any intention of "catching out" the officers concerned, and that a year or two ago I could not have answered them correctly myself. I am bound to say, however, that I was rather surprised at the extreme inaccuracy of most of the replies I received—that is, when any definite replies were returned, for many of the officers addressed said frankly that they were quite ignorant on the subject and could do no more than guess at such things. Nearly all of them showed marked interest and concern on learning the actual state of affairs; that this is no mere question of the profits of capitalists, but of an institution on which millions of working men and women at home depend for their bare livelihood; that while enormous areas of fertile cotton land are lying waste all over the British Empire we are still going hat in hand for the raw material of this, the greatest and most truly national of all our export industries, to a foreign State whose own consumption is rapidly overtaking its production; that this dangerous and humiliating dependence can be ended if we make a resolute effort to grow our own cotton for ourselves; that it can be ended in no other way; and that, unless so ended, it must result, sooner or later, in sapping our foremost export trade at the roots, and in adding wholesale to the industrial unemployment which is already taxing the resources of the nation to the uttermost.

Several Political Officers told me that, had they realized the force of this earlier, they would have looked at cotton from a different standpoint, and some suggested that a pamphlet setting out the above and other relevant facts would be welcome. That is, primarily, a matter for the Nigerian Government to decide; but I assume there would be no objection in that quarter, since naturally any note or treatise intended for issue to officers of the Nigerian public service would be submitted first for the approval of the Governor. Generally speaking, I have not very much faith in the efficacy of pamphlets in such a case. They are usually glanced at in a perfunctory way and thrown aside. But I hope and think that one of the results of my tour has been to awaken a certain amount of fresh local interest in the cotton industry, and therefore, perhaps, a short, clear statement of the Imperial aspects of the industry might be acceptable and productive of some good.

Of course, many admirable pamphlets on cotton are in existence already, but most of these are rather too technical for the purpose I have in view. What we want in this case is to enlist the sympathy and awaken the interest of a class of officials who are neither trained men of business nor agricultural experts, but who can be counted on, nevertheless, to respond generously if once they can be fully convinced that a great British industry, on which millions of their countrymen and women depend for their daily bread, is in danger

of being driven to the wall, and is appealing, not for privileged treatment, but simply for such assistance as can fairly and legitimately be given to free it from dependence on foreign supplies.

The statement should explain briefly the nature and extent of this dependence; the startling modern increase in American consumption; the fact that American production is not expanding, and cannot possibly expand, rapidly enough to meet the ever-increasing demand for raw cotton all over the world; that consequently (and quite legitimately and naturally) the States of the Union are taking every year more and more of the American crop for their own needs, and that, too, the pick of its quality, so that the amount available for export to England is steadily shrinking; that this is simply a process of atrophy; that unless we bestir ourselves to counteract it by growing our own cotton for ourselves, the end is only a question of time; that meanwhile, moreover, that end might be suddenly accelerated by any one of many possible intervening factors—by a few bad harvests in America; by civil distraction within the body of the United States; by hostilities between the States and some other Power; by anything, in short, which might interfere with the normal rate of American production. The widespread misery and destitution created in England by the failure of our cotton supplies during the American Civil War are no longer remembered. They might well be recalled to point the lesson of what a stoppage of raw cotton means to this country, although, evidently, the consequences of such a stoppage now would be incalculably more disastrous than they were in 1861–65.

All this, of course, will be the merest truism to the members of the Committee, to whom everything relating to cotton is a subject of special study and concern, and it will be the same to the Governor of Nigeria and his principal advisers. But the Political Staff stands in rather a different position—and yet, if we are going to achieve anything substantial, we *must* have the willing co-operation of the members of that staff, for we cannot get at the natives except through them, and we cannot get cotton except through the natives. Long ago—longer than I care to remember now—I was a Political Resident myself, and I have therefore both a special regard for that branch of the Colonial Service, and a better understanding, perhaps, than most men of its characteristic point of view. If you address these young officers in terms of bare statistics; in terms of so much money spent, so many bales exported, so much profit, so much loss, you will leave them cold. But if you can once bring home to them that the question at stake involves the actual livelihood of great masses of men, women, and children in England; that it touches the prosperity and very existence of the greatest of all our British export industries, whose record is interlaced with the history of colonial

expansion at every step, and that their co-operation is necessary to rescue it from a real and imminent danger, then, I am sure, you will not ask their help in vain.

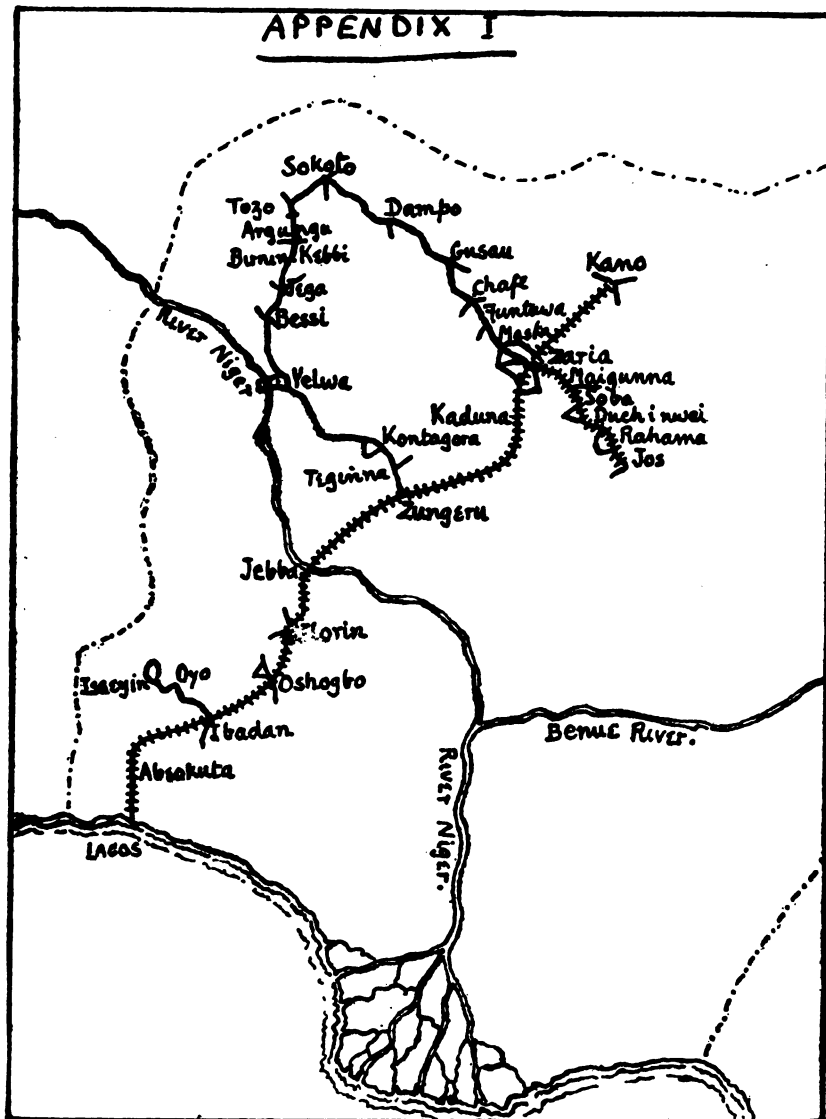
### CONCLUSION

I have now completed my report, as far as I can do so in writing. It is rather more voluminous than I had intended. I hope it is not so much so as to be tedious, but the problems to be dealt with are many-sided, and I have felt it advisable to review them as comprehensively as is practicable within the limits of such a treatise as this. At the same time the report is only meant to serve as a basis for discussion, and when the Committee considers it in detail various points will probably emerge as to which the members may desire further information, or may wish to consult me personally. I need not say that I shall be very happy to meet their wishes in that respect to the best of my ability at any time.

HECTOR DUFF.



## APPENDIX I



Rough sketch-map, showing routes followed during my tour in Nigeria thus:

++++ = By railway. — = By motor, on horseback, and on foot.

The stations and villages marked on the sketch are those at which I halted for periods varying from a day to a week (in two or three instances for a little longer) according to their importance. Distances traversed as follows:

By Rail-way.	Lagos-Kano and return	- 1,410 miles	}	Total by rail	- 1,698 miles
	Zaria-Jos and return	- 288 "			
By Motor.	Zungeru-Kontagora-Sokoto-Zaria	- 631 miles	}	Total by motor	- 788 miles
	Ibadan-Isseyin and return	- 57 "			
	Shorter trips (about)	- 100 "			
On Horse-back and on Foot.*	Various excursions from camp (about)	- 480 miles	}		- 480 miles
	Total	- 2,966 miles			

\* This may be rather under-estimated.

## APPENDIX II

## AREA AND POPULATION OF NIGERIAN PROVINCES

(FIGURES SUPPLIED BY THE NIGERIAN SECRETARIAT)

<i>Province.</i>	<i>Area in Square Miles.</i>	<i>Native Population.</i>	<i>Per Square Mile.</i>	
NORTHERN PROVINCES	Sokoto	32,600	1,516,326	46.51
	Kano	29,500	2,826,897	95.82
	Bornu	33,600	731,149	21.76
	Bauchi	23,700	933,652	39.39
	Zaria	13,320	318,643	23.92
	Kontagora	27,800	169,485	6.09
	Munshi	16,936	569,944	33.65
	Nassarawa	16,710	266,248	15.93
	Muri	21,231	222,258	10.46
	Yola	11,600	259,056	22.33
	Nupe	16,770	326,548	19.47
Ilorin	13,588	527,932	38.85	
SOUTHERN PROVINCES	Oyo	14,381	1,517,900	105.55
	Abeokuta	6,316	348,885	55.24
	Ondo	7,861	427,317	54.36
	Benin	9,200	489,022	53.15
	Warri	10,260	597,971	58.28
	Onitsha	5,311	1,928,000	363.02
	Owerri	7,543	1,469,000	194.75
	Ogoja	8,014	923,630	115.22
Calabar	6,234	1,034,840	165.99	

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# EMPIRE COTTON GROWING CORPORATION

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## COTTON GROWING IN NIGERIA.

### SUPPLEMENTARY NOTE BY SIR HECTOR DUFF ON LIGHT RAILWAYS.

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[NOTE.—When writing my final report (since published) on the cotton industry in Nigeria I found that the notes I had taken on the spot during my travels in the Protectorate were so copious that, if reproduced in full, they would run to nearly 150 pages of print. With a view, therefore, to condensing the report as much as possible, I rejected such of these notes as could be spared without detriment to the essential purposes of the document. The report has probably gained in clearness by this elimination, but among the material so excised I included inadvertently some notes on light railways, and as this question is of great practical importance to the cotton industry I think it as well to reproduce here a short summary of what I had intended to say on the subject.]

WHAT light branch lines can do for cotton has been shown already to some extent by the Bauchi light railway (2 feet 6 inches) which runs from the existing main line at Zaria to Bukuru, a distance of about 150 miles.

This railway was not built in the interests of cotton at all. It was built in the interests of the tin mines. But, while serving those interests primarily, it has at the same time developed the cotton industry to a very marked extent along all those parts of its course which traverse country capable of growing this crop—as far, that is, as Rahama or thereabout.

unsatisfactory, the most expensive and the most difficult to procure, the more we can reduce our dependence on it the better. But unless we are prepared to cover the land with a veritable network of rails, which is clearly out of the question, we shall always have to rely on this flexible transport in some degree, so that, concurrently with railway development, the study of its organization and control should never cease to engage our attention.

I am bound to say that the idea of light railways did not seem to find much favour among the majority of the Residents and others with whom I discussed it in Nigeria, and I often heard the hope expressed that the Bauchi line itself might be changed eventually to the standard gauge. I am inclined to think, however, that a good deal of this unpopularity is attributable to the personal inconvenience attaching to journeys over light rails. Thus a traveller bound for Bauchi finds himself obliged to change at Zaria into a train running on a track narrower by twelve inches than the main line. The accommodation is inferior, there is less room for his personal luggage, and the oscillations of the light carriages bump him about unmercifully, so that by the time he has reached his destination he is quite convinced that light railways are a mistake.

Objections of this class count, of course, for nothing at all from the point of view we are now considering. The only criticism I heard about light railways in Nigeria which seems to merit attention is that they involve considerable delay and expense in the matter of breaking bulk and transferring cargo. How far this contention is accurate I cannot say. It is evident, of course, that some extra handling of freight goods must occur wherever they are moved from a light line to a heavier one, but incidental disadvantages of that kind can only be regarded, I think, as a very partial set-off against the great benefits which light railways confer.

While I am on this subject I should like to advert for a moment to the question of the new tractor system known as "Roadrails," which I mentioned in my substantive report as

having been brought to my notice in very favourable terms by Brigadier-General Sir F. Guggisberg, Governor of the Gold Coast. I have lived so long in Africa, and have seen so many ingenious inventions and contrivances come to grief there, after having been introduced with high hopes and confident claims, that I should be very chary of assuming positively, without much wider evidence than I now possess, that the Roadrail, or any other novel system, is really capable of solving our difficulties as regards auxiliary transport in Nigeria. But there are various reasons which incline me to think that it would be as well to keep the question of this particular tractor in serious view meanwhile, and to inquire carefully into its possibilities.

In the first place, I attach considerable weight to the strongly expressed opinion pronounced in its favour by the Governor of the Gold Coast, not only by reason of General Guggisberg's wide African experience, but because he happens at the same time to be a professional engineer officer and, as such, is more competent presumably to form a sound judgment on matters of this kind than a layman would be. In the second place, I understand that the Roadrail system is now being tried by the Governments of two tropical African Protectorates—namely, Kenya (formerly British East Africa) and Uganda. This, I think, is a point of much importance. It shows, at any rate, that the *prima facie* merits of the tractor are sufficient to have induced two British Administrations, acting under expert advice, to undertake all the trouble and expense involved in putting the system to practical proof on the spot, and, in the case of Kenya at least, on a very considerable scale. These trials evidently cannot fail to be of great interest to us. They provide just the sort of experiment which is best calculated to test the qualities of the new invention under conditions nearly approximating to those which obtain in Nigeria itself.

I understand that Sir Edward Northey, the Governor of Kenya, has estimated the cost of the Roadrail track now under

construction in that colony at £1,080 per mile. This is much less than half the cost per mile of the Bauchi light railway, and, at such a rate, the experimental line which I have suggested from Ibadan to Isseyin could be built for £32,400.

All I suggest in the meantime is that, since Kenya and Uganda are in fact purchasing their own experience of this tractor, we should get into touch with their Governments, explain the objects which we have in view, and ask them to inform us as exactly as possible of the results of their experiments.

















JUL

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